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The Need for a New Educational Approach

JOSEPH S. COLLINGS

MEDICAL EDUCATORS and thoughtful practicing physicians are constantly expressing concern about the future of medicine. Much of this concern centers on the future of general practice.

This is not something new. A review of the literature of the last 50 years shows that the same worries were current in 1900 as at present, and that the same thoughts were being expressed in almost the same words. Titles and contents of papers written on this subject during this half century are remarkably alike. In essence, the writers say that:

1. General practice (undefined, but considered either in their own image, or in the image of the pattern of general practice known to them locally) is doomed.

2. The primary cause of the impending disaster is the ever-increasing trend towards specialization.

3. The medical schools have gone along with this trend, adapted curricula and teaching methods to the

needs of specialists and neglected the requirements of general practitioners.

4. All this is bad; general practitioners are the "backbone," the "life-blood," the "foundation," etc. of the medical profession; people need general practitioners; the general practitioner (and therefore the public) is not getting the best treatment at the hands of the specialists, the hospitals and the medical schools.

Most of this is sound enough, indeed some of it is indisputable but, having said it, the authors have had little that is practical to say about what might be done to stave off this (always impending) crisis.

The movement toward specialization and the gearing of medical education to this end has gone ahead rapidly during the last 20 or 25 years, but the final 10 years of this period has shown, on the part of some medical educators, a somewhat more realistic approach to these critical problems.

In 1951¹ 50 medical schools reported that they were sponsoring one or more programs designed to interest and prepare students for careers in general practice. Twenty-five schools reported that they were

This article was written after a six-year study of general practice and related problems made by Dr. Collings in the United States and other countries. In this country they were made under the auspices of the Rockefeller Foundation, the National Institutes of Health and the Health Insurance Plan of Greater New York, which Dr. Collings recently served as associate medical director. He presently is living in Spazio, Italy.

The Need for a New Educational Approach

sponsoring internships, and 19 more that they were sponsoring residencies in their affiliated hospitals, specifically designed to meet the needs of prospective general practitioners.

This swing of the educational pendulum is encouraging, but needs careful evaluation against a realistic assessment of the basic problems associated with general practice.

Charles E. Nyberg,² in a progress report on undergraduate education for general practice points out that many of the above mentioned programs are relatively new and experimental.

It seems strange that present-day medical educators have to be experimenting in an elementary and empirical way with teaching techniques for general practice—the longest established and still the greatest part of all medical practice. It is equally strange that so much reliance is placed on what is euphemistically termed "orienting" the student toward general practice (this almost implies persuasion against better judgment), and also on *artificial means* to simulate conditions of general practice (e.g., hospital outpatients and indigent care programs).

The reversion to discarded teaching techniques such as preceptorships, and the numerous attempts to give "direction" to clinical training through emphasizing (or reemphasizing) the role of special departments such as preventive medicine, together with the more recent clamor for special departments of general practice all highlight the current dilemma of medical education in its approach to the basic problem of training the general practitioner.

Part of the problem lies in the failure to clearly define and delineate the province and function of general practice in particular circumstances,

and to appreciate general practice for what it is today.³ Another part lies in the hope that education, per se, offers a panacea for all the ills of general practice.

Contemporary Education and Practice

When all possible criticism has been leveled at modern medical education and those responsible for it, we are left with one indisputable conclusion: *the average graduate from an approved medical school, who has had an approved hospital training, is versed in the basic clinical disciplines (and many not so basic) essential to the conduct of sound and safe general practice.* He knows how to approach a diagnostic problem and how to carry out basic therapy; he also knows his limitations in both these fields.

He knows that the taking of a complete and detailed history and the conducting of a thorough physical examination is the key to safe and accurate diagnosis. He knows how to take a history and how to do a physical examination. He also knows *the things he should not do*—he knows, for example, that without special training he should not attempt to take and interpret x-rays (with the exception, perhaps, of plain x-rays of the chest and small bones) or to record and read electrocardiographs. In the area of treatment he knows how, and usually when, to prescribe the commonly used medicines and drugs. Here again he knows what he should not do. He knows for example, that without special training he should not attempt major surgical procedures, or x-ray, or radium therapy.

In the course of his training he may have learned much more than this. He may know the value of well-kept records, when specialist con-

sultation is necessary and how to use it effectively, and the value of elaborate laboratory tests which he cannot do himself. He may even know the rudiments of clinical research, and a little about people, so extraordinary in their conduct, customs and infinite variety.

With all these skills and all this knowledge at his disposal the neophyte doctor has the makings of an excellent general practitioner, and with the accumulation of experience he should become just this. Yet, it would seem that this promise too rarely reaches fulfillment.

In some degree, too often an extreme degree, these are the things that happen to the young doctor entering community practice. Frequently they happen in spite of his own desires and good intentions. Almost at once he begins to neglect some of the basic tasks he knows he must do if he is to be a good doctor, and to do some of the things he knows so well he should not. He too often takes inadequate histories, is negligent about his records, cursory in his physical examinations and is mindful of symptoms while often casual of illness. He may buy an x-ray machine, an EKG and other mechanical aids to diagnosis and therapy and rely more and more on these than on the time-consuming disciplines of hospital and medical school days. He may gain admission to the local hospital and there undertake prodigious feats of surgery and obstetrics, gynecology and urology, which he had been so well instructed were the province of the surgical specialists.

This is not a case in which we can say "forgive him for he knows no better"—he knows much better. Nor is it a case for turning on his teachers and blaming them for all the deficiencies in his behavior as a doctor

for, as has been pointed out, he has been well instructed in the basic, clinical disciplines necessary to good practice. What we need to know are the causes of this decline and fall from professional grace; then we need to examine the real relationship of education to this process.

Today the gap between medical educational achievements and achievements in community medical practice is enormous. The closing of this gap, and the translation of medical school and teaching hospital disciplines into effective practice is an urgent necessity.

Major Causes of Unsatisfactory General Practice

The chief enemy of general practice is time. The busy (and by implication, successful) general practitioner who works alone rarely has the time to take complete and detailed histories, to do thorough physical examinations, to carry out the routine laboratory tests and to keep good records. Unless he does these basic things he cannot be a good doctor (at least by teaching standards). The busy general practitioner does not have time (always assuming he has the ability) to deal properly with the many and varied psychological problems of his patients. If he cannot do this he cannot be a good general practitioner.

Last but not least, he does not have time (always assuming he has the opportunity, which frequently he does not) to attend conferences and hospital rounds and go through all the other procedures considered essential to keeping pace with modern developments.

For reasons of time alone he is forced to "cut clinical corners," and to do "the best he can in the circumstances" which too often falls far

short of acceptable standards. If he is prepared to sacrifice income in the interests of time and better work, he still has to contend with the requirements and demands of his patients. He cannot refuse to attempt to meet these requirements. If he does, he soon will be out of practice.

The general practitioner soon learns that he has to conform to the patterns of practice in his community. If the other doctors are taking x-rays and EKG's, doing obstetrics and major surgery, he too must do at least some of these things or lose status and income. There is a dual pressure on him—the pressure of economic necessity and the pressure of patient demand, whether real or artificially created. Another factor which should not be overlooked when considering the conduct of the general practitioner is that of professional frustration. Trained to a certain performance which circumstances later deny him, he looks for a way out. Denied the opportunity to do the things he knows he should be doing, and frequently excluded from the hospital environment, he finds relief from professional frustration in the operating rooms of small and poorly controlled hospitals, or in the manipulations of complicated medical machinery. This is a very human trait—the frustrated engineer turned bank clerk can find his way out with model planes, boats or electric trains; so why not the doctor in his way? Besides, such indulgence brings financial reward.

Every intelligent doctor and educator knows that these things occur in general practice, even if they have not spelled them out. If they deny them, how can they justify the endeavors, on the one hand to prevent the general practitioner from "excess" by excluding him from or

limiting his function in the better hospitals, and by "forcing" specialist control, and on the other of the elaborate and costly postgraduate educational program designed to try to bring him "up to the mark?"

This half-knowing, but not wanting to look too closely at, and certainly not wanting to admit these great weaknesses in our medical armament, has left the machinery of medical education floundering badly and dealing with isolated symptoms of a serious illness.

It must be recognized that the primary forces controlling general practice (and therefore the majority of medical care for the majority of the population) are social and economic. The role of medical education, however important, is now secondary. The educational trend today is to yield to these forces and to try to find substitute tasks for the doctors, who cannot do properly the things they must.

What Is Needed?

The pressures and problems discussed above cannot be resolved through manipulation of, or addition to an already overburdened medical curriculum; nor can the medical schools and medical educators be held responsible for either the creation or the continuation of unpleasant social and economic forces. However, they do have a responsibility—to teach the doctors of the future how best to contend with these forces, insofar as they will affect their professional conduct.

The passing from the sheltered and abnormal institutional world of medical school and hospital to the complex everyday world of community practice is a difficult experience for the young doctor. Some of the things he has to contend with, and what too

frequently happens to him, have been discussed above. Some medical schools are trying to deal with this problem by "simulating general practice" in the outpatient departments of hospitals, sending students out on home care programs and utilizing health department clinics and similar facilities.

Two things need to be said about these artificial means of teaching general practice. Outpatient departments never can simulate general practice, and may we all be spared the fate of shaping general practice in the image of hospital outpatients. The exposure of medical students to the problems and ways of medical care for the indigents is enough to drive every normal student (except the born missionary or commercial exploiter) out of general practice into immediate specialization or down any other road of escape he can find.

The re-adoption of preceptorship training, discarded decades ago, is interesting. If preceptors can be found who have established first-class practices and meet the requirements of their community and the standards of modern medicine and have, in addition, the time, inclination and capacity to teach properly, there is a place for preceptorship methods in modern education. However, to hope that such fortunately placed preceptors can be found in the vast quantities required to meet the needs of thousands of medical students is to hope for too much. In rural areas the possibilities are probably much better than they are in urban areas. However, most of our medical schools are concentrated in the cities.

The medical schools must devise the means, not only of teaching clinical procedures and moral and ethical standards to students, but also the

means of teaching them how to translate these into community practice. The last mentioned is the great missing link in contemporary medical education.

To this end the medical schools need to create working examples of really good community practice, which can operate and survive the various conditions under which doctors are going to have to work. These must not be artificial, and need to be financially self-supporting (except for the additional costs involved in teaching procedures). For this purpose the schools are going to have to call on the services of established practitioners, not only in their immediate vicinity but in other regions representative of different community conditions. They will have to rely on these doctors, whether or not in the beginning they meet the exalted standards of teaching hospitals.

The medical schools must take on the responsibility of recruiting these physicians and establishing them in working conditions which will permit a truly satisfactory level of community practice. This presupposes small group practice units with general practitioners as the key members of the group.⁴ It also presupposes the initial underwriting of the costs of small medical centers, basic equipment, and essential clerical and technical staffing. (This underwriting could take the form of long-term, no-interest loans.)

The development of this teaching medium is not going to be a sudden creation. The future teaching unit first must establish itself as a self-supporting and satisfactory medical care organization. The doctors recruited must be helped to this status.

Recruitment is not going to be easy for many reasons, but the medical schools are in a good position to offer strong professional inducements. Doc-

tors willing to take part in such a program can be offered appointments on the teaching hospital staff and all the educational facilities this provides, together with status compatible with their own immediate abilities and promotion in line with their future achievement. The teaching hospital also can offer the collaborative services of their specialist staffs and the immediate and continuing assistance of one or more full-time, teaching representatives, who will take part in the day-to-day working of these units. In brief, the medical schools and teaching hospitals are in a position to be able to create and demonstrate how a bad working environment can be turned into a good one.

The creation and development of this teaching medium should be considered as a three-stage operation:

1. Creation of a satisfactory medical care unit, which can meet community needs, attain the standards of modern medical practice and survive within a given economic situation.

2. Development of this into a teaching unit for undergraduate students.

3. Further development into a unit of clinical and social medical research.

Any attempt to do these three things simultaneously would be disastrous. The desire to do so, which would not be out of line with the academic-research approach, would require large financial subsidy and immediately render the entire program artificial.

It must be realized that the intelligent medical student has a good understanding of what is academic and what is practical, and demonstrates consequent disinterest and distrust in the former. All suggestion of artificiality must be avoided.

Practical possibilities must condition the entire development. However, as a teaching venture it would not be out of line for the university, in the first instance, to pay the salaries of such people as social workers.

It is realized that there are great difficulties involved in such a project. Not the least is the suspicious, confused and frequently myopic attitude of the profession to group practice. Offsetting this is the urgent desire of the general practitioners of the country for professional status, which in the end can only come through performance and not through such means as board certification. This is the first step on the road to status via performance.

The successful accomplishment of this project would have many valuable by-products. It would not only demonstrate to the student how good medicine can be practiced at the community level, but would serve as a demonstration to established practitioners. It would serve as a means of advancing clinical and social research by making it possible to utilize the knowledge and records of general practitioners, which today is impossible. By the incorporation of city and county health authorities it could serve as the rural meeting ground between public health and medical care. Not least, such a medium would give cohesion to the miscellaneous and experimental educational projects so prevalent.

It is not suggested that endeavor along these lines supplants the need for seeking a definition of the rightful province and function of the general practitioner or the need for continuing revision of curriculum requirements. It is, however, strongly suggested that this is the way to a quicker and more accurate determination of these matters, and will

remove the debate from the academic stratosphere to the ground-level.

Volume of clinical material is a sine qua non of successful teaching and this will be a factor in the determination of the number of doctors in any one unit. It is suggested that a population of from 10,000 to 15,000 people would provide a satisfactory body of teaching material for community practice, and that units of 5 to 10 doctors could satisfactorily meet the needs of this population group.

The professional composition of the participating physicians will vary according to community requirements. In large cities general practitioners, together with a consultant internist, a pediatrician and a psychiatrist (others will, of course, visit as necessary) would form the core of the group. In rural communities an obstetrician and probably a surgeon should be added. Those doctors concerned with the continuous care of people should form the core of the group. In all circumstances, however, the basis of the unit must be the general practitioner.

Most medical schools and teaching hospitals are situated in large cities and usually depend on the poorer strata of society for teaching material. It is regrettable but true that these poorer people are the worst served at the level of community medical practice.

It is a paradox of modern medicine that the worst of general practice is to be found in the very shadow of the great hospitals and teaching institutions. The reasons for this are many and complex, but the result is as though someone has built gigantic medical skyscrapers in the middle of the medical slums.

At the best the great hospitals compensate for bad medical practice

in their immediate environs; at the worst they exacerbate the situation; occasionally, in some degree, they complement the work of the community practitioners in the neighborhood, but more often they stretch the hand of cooperation and assistance to doctors in remote areas.

At the same time it should be realized that in the immediate vicinity of these hospitals is the greatest concentration of clinical material necessary for teaching purposes.

All this presents a manifold challenge to the medical schools, the hospitals and all medical educators. There is creative work to be done in the field of teaching and developing general practice—it will never be done as long as medical schools "ride on the coat-tails" of public health authorities and indigent care programs, or maintain a "holier than thou attitude" to community practice and try to ignore or by-pass this by further isolationism and confining serious teaching to the hospital.

It is within the power of the medical schools to correct these paradoxes, to make full use of the latent resources with which they are surrounded, to clear the "medical slums" which lie at their doors and to give dynamic leadership in establishing good patterns of community practice.

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Issaquah School Health Program

A pediatric educational program in which a public school, health department and a medical school work together to provide valuable training to medical students.

ROBERT W. DEISHER

THROUGHOUT THE country there has been a trend in pediatric medical education to concentrate less on the illnesses of childhood and more on the child itself. Understanding of normal physical and emotional growth and development has been given a prominent place in the curriculum of medical schools.

Most of the instruction and experience in well-child care which the medical students at the University of Washington receive is at the University Child Health Center.¹ An attempt is made to give students some understanding of the normal growth and development of children through the coordinated efforts of a well-trained staff including pediatricians, public health nurses, medical social worker, nutritionist, child psychiatrist, psychologist and dental hygienist. Since most of the subjects are of infant or preschool age, however, a need was felt for study of older chil-

dren in addition to those served by the child health center.

It was thought that a school or group of schools might be the best source for the study. The administrator of the school health service for King County, Wash., was approached and the matter discussed with him. At conferences held by representatives from the county health department, county school superintendent's office and the University of Washington School of Medicine, it was decided that the Issaquah school district seemed nearly ideal for the program planned. It had approximately 1,300 pupils, covering kindergarten through high school, and was within easy commuting distance of the university. A wide range of occupations were represented such as farming, lumbering, mining and urban work. Most important of all, the staff was very progressive and interested in the health of children.

Several planning sessions were held by the superintendent of the Issaquah school district, the di-

¹Dr. Deisher is assistant professor of pediatrics at the University of Washington School of Medicine, and director of the University Child Health Center.

rector of the Division of Maternal and Child Health of the Seattle-King County Department of Public Health, and the director of the University of Washington Child Health Center.

Each of these people had a somewhat different objective concerning the project, but it was felt that the needs of each group could be met by developing a worthwhile program. From the standpoint of the school, a program in which the teacher would be helped to become more aware of the child's health needs was desired. The health department was particularly anxious to have a good demonstration of a school health program from which other schools might gain ideas. The University of Washington was desirous of giving medical students an understanding of the school-age child similar to that given them at the child health center of the infant and preschool child. It also was hoped that students would become aware of their responsibilities as physicians in a school health program.

Contributions made by the health department were an increased amount of public health nursing time available to the school, part of which would be spent in health coordination until the program became established, and extra help from the health department dentist, health educator and physician working in the school.

The school made extra time of administrators and teachers available and contributed additional funds for the nurses' salaries. The University of Washington Child Health Center arranged that certain members of its staff—namely a nutritionist, dental hygienist, psychologist and psychiatrist—should serve as consultants to the school.

The program was planned in such

a way that every three weeks a small group of two to four fourth-year medical students spent an entire day in the school.

Program Outline

An outline of the day's program is as follows:

9 A.M.—10 A.M.—Introduction to superintendent of school district who welcomes the medical students and talks informally with them about the value of this type of program to the school-age child.

Orientation concerning the Seattle-King County school health programs is discussed by the maternal and child health director of the Seattle-King County Health Department or a member of his staff.

Orientation is given by the director of the child health center as to the part the day's experience can play in giving students a better understanding of the school-age child's normal growth and development, the kinds of problems encountered in this age child and the possible roles they, as practicing physicians, can play in the school health programs of their own communities.

10 A.M.—12 Noon—Half of the group accompanies the public health nurse to a classroom for observation of a teacher-nurse conference. Before the medical students enter the room for the teacher-nurse conference, the public health nurse talks to them a few minutes about the purposes of such a procedure. The conferences are conducted in the classroom in the same manner as routinely held in the school, but it has been arranged previously with the teacher that certain kinds of problems will be presented for purposes of demonstration.

The other half of the group accompanies the physician to observe and participate in health conferences with

the parents of children screened by the various methods used. The health conferences are planned to show examples of typical conferences which are held routinely. These usually include a child entering the school without a record of a health examination by the family doctor within a reasonable length of time, a child screened by the teacher from his or her observation and referred to the nurse and a child screened because of poor growth as shown on the Wetzel Grid.² Occasionally a child is included who has been screened by the Snellen vision testing technique or by an audiometer test. Before the conferences begin the public health physician discusses briefly with the medical students the methods of screening used in the school. The purpose of the conferences is explained as being an opportunity to bring together the observations of the teacher, the nurse and the parent to determine whether the child needs further study or evaluation and if so to arrange for proper referral. The opportunity to do a certain amount of health education is pointed out and it is made clear that neither diagnosis nor treatment has an appropriate place in this type of conference. In scheduling these conferences it is considered necessary to have the parent, the teacher, the public health nurse and the physician all present. Sometimes the child is examined briefly, often he is not. At the end of one hour the two groups of students change.

12:00—1 P.M.—The medical students eat in the school cafeteria and have an opportunity to observe the children while eating. During the latter part of the lunch period the nutritionist from the staff of the child health center discusses with them nutrition relating to the school-

age child and some of the nutrition findings discovered in a survey of this district. She also discusses types of nutritional projects that are incorporated in the curriculum at different grade levels. Whenever possible students observe nutritional projects in the classroom.

1 P.M.—2 P.M.—Medical students meet with the child health center dental hygienist who is consultant in the dental health program. In addition to the discussion with the medical students of the program being carried on by the school to promote dental health, she demonstrates the need for this by allowing students to observe some of the children's mouths. This is done during a teaching project in which certain children in a room brush their teeth shortly after eating and then have a disclosing solution applied to their teeth to show up any remaining food particles. This way a child with very poor teeth is not singled out and made to feel self-conscious but is just included in the group with others.

2 P.M.—2:45 P.M.—The principal of the elementary school takes students on a tour of buildings to demonstrate to them both sanitary facilities, classroom arrangement, lighting and other features of the school plant relating to health.

2:45 P.M.—4 P.M.—School staff, consultants and students hold a conference regarding a child referred by the teachers as showing a certain type of behavior which they find in their children and about which they desire more understanding. The teachers, public health nurse, physician and psychologist present information they have about this child and his family relationships. In the informal discussion that follows, the child psychiatrist helps the teachers and students understand the mean-

ing of the child's behavior and shows them how the school and teachers might help him.

Evaluation

At the end of the public health clerkship, students make a thorough evaluation of the various parts of their public health program. For the two years it has been in operation the school health section generally has been considered one of the most worthwhile experiences. Students have felt that the day gives them some appreciation of the importance of school health and their responsibility toward such community programs and have made some helpful suggestions about the program.

We believe this is an excellent example of the progress that can be made when a public school, health department and medical school work together.

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Illustrated Lectures in Moving Pictures

DAVID S. RUHE

GUTENBERG INVENTED movable type for the printing press about 1450 and, fortifying the human tongue, unloosed an ocean of printed words. With his invention came the possibility of general verbal literacy, a goal now nearly achieved in the western world.

In the 19th century Daguerre and Fox-Talbot took the first steps to photography. Before the turn of the 20th, Marey, Muybridge, Edison, Pathé and others contrived the motion picture. Zworykin and a host of others made possible the electronic miracle called television. With the further aid of an intensifying photogram, a general if unrecognized visual "literacy" is now approaching, is not far behind verbal communication and is overtaking it rapidly. In our medical motion pictures, however, we have not applied the visual skills which are so commonly accepted in the world about us.

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Motion pictures have the dimension of time, whereas still pictures are a frozen moment. The adequate control of changes in time and space in the telling of a motion picture message requires the exercise of procedures which together have been called "A Grammar of the Film" by Spottiswoode.¹ The use, misuse or absence of these visual procedures produces whatever degree of visual literacy may be found in any given film. Such film literacy consists simply of four elements: visual orientation, selective and logical visual coverage of all essential action, visual pointing for the clear focus of attention, and visual bridges between scenes and sequences to account for time or space changes. The close and proper relationship of "literate" motion pictures to literate words creates a technically effective sound motion picture.

Among the many formats possible for effective presentation of film messages, one type of sound film, the medical motion picture illustrated lecture, urgently requires description and analysis, for today it is virtually the type species of so-called "teaching" films. At the same time it is one of the most serious obstacles to good medical film teaching and learning,

as Nichtenhauser² has repeatedly emphasized.

First, however, the process of teaching by words must be superficially outlined in order to understand how the medical motion picture lecture came to be such a type species.

The Lecture and Textbook Chapter, Conventions of Verbal Teaching

The medical teacher carries his tongue about with him. With it he can emit sounds which, when codified, become a language of symbols. Although a considerable proportion of humans actually think mainly in terms of pictures rather than words,⁴ men have no personal projective devices to communicate their mental pictures *as pictures*. Therefore, teachers tend to take the easiest route of communicating what is in their minds: they speak. Next, they convince themselves that this is also the best way, and for them teaching becomes talking. In the classroom such talking has become formalized in the conventional lecture.

A traditional lecture has a fairly characteristic structure: an introduction which includes history, definition of terms to solve semantic hurdles and some generalizations in advance; a body of facts arranged by intellectual logic, fact after fact, experimental datum upon datum, case upon case, all discussed as may be pertinent; and finally, a few conclusions or a summary.

The textbook chapter follows essentially the same intellectual organization. Chapters in tandem comprise a book. Processes of photography and photoengraving made possible the illustrated textbook as we know it today.

With the coming of slides and projectors, illustrated lectures became

possible. And when mass-produced still cameras and cheap film created a widespread accumulation of personal slide collections, the fullblown classroom illustrated lecture appeared.

The Illustrated Lecture Film, Logical Illogic

With the development of amateur motion pictures, medical teachers had finally achieved a way of projecting visual things as they were actually to be observed. To teach by means of an illustrated lecture film appeared to be—and in part actually was—a fitting next step in the evolution of teaching methods. However, there was a joker. The medical makers and users of motion pictures, without knowing it, had collided with a new human language, a new form of expression where the flow of pictures was dominant in communicating the message, and where the accompanying words, if any, properly had become recessive, explanatory and interpretive of the pictures. And, although doctor-citizens were quickly accustomed to sitting in a motion picture theater for entertainment, it was quite another thing for the same doctors as teachers to seek to create motion picture messages without recognizing the very existence of a visual language which they took for granted in the theater. It seemed logical to them to make medical films in their traditional lecture format, since they had no realization that visual messages have their own *visual* continuity based upon changes of form in time. Such visual continuity has its own inherent logic, of course, based upon what can be seen.

Confusion was compounded further because the medical sciences are a natural arena for motion pictures. Much of medicine is visual or visual-

izable and is intrinsically the material whereof motion pictures are made, notwithstanding the fact that much of this material has been traditionally taught through words. Examples are legion. Operative surgery has a natural chronology, and its procedures are the inherent stuff of motion pictures. Embryology is growth within a time span; e.g., natural motion picture material. Physiology is anatomy in action, among its other attributes. The natural histories of diseases occur in various spans of time, and bring about concrete spatial changes in the humans afflicted; this is the very tissue of motion pictures. The list is long, for medicine's content is largely the substance of real or potential motion pictures.

The fundamental difficulty has not been in the subject matter of medicine. It has been in the minds of the medical advisors and the teacher-users who were seeking to evolve better approaches to teaching. The teacher who has become a film author or advisor from the first usually has assumed the dominance of words—for does he not carry his tongue around with him as a faithful servant?—and has not only forced motion picture teaching into the cast of lectures but also has made visual logic a sacrifice to verbal logic in a large number of cases where it was not only unnecessary but undesirable. It is small wonder that a great if vague discontent with medical teaching films has resulted.

The producers, on their part, have bowed to the usually superior intellectual and economic force of the medical sponsor-teacher-advisors. A few may have known better, although very few medical producers or clinical cinematographers have come from the training grounds of professional film making, but rather

have grown up in the commerce of medical films without achieving a broad perspective.

As for the users, illustrated lectures were their staff of life. They knew no better, and in reasonably good temper accepted for their motion pictures the conventions of the slide-illustrated talk.

The Present Method of Production for Illustrated Film Lectures

It will be instructive to outline in simple fashion the present method of production of "teaching" medical motion pictures, since the films are the result both of the attitudes of their creators and of the process of creation.*

1. *Initiation.* For whatever reasons, a teaching film on a specific subject is conceived by someone to be desirable for transmitting certain medical facts, skills, concepts or attitudes. Through complex and highly variable circumstances, a motion picture team is linked with expert medical scientists and/or teachers.

2. *Research.* The writer is the first of the motion picture team to become involved with the medical advisors or medical committee. Theoretically, the writer is the "film architect" who is to prepare a script; a script is simply a plan for motion picture visualization of the subject matter. Actually, since the writer's training and background in both films and subject matter are often sketchy, he is poorly prepared to sell the concept of visual message-telling to the advisors. In addition, the writer's usual lack of scientific training prevents any valid critical content judgments of his own.

*Note: This is a composite picture of current if changing film concepts and practices, as observed and experienced in many films. All possible variations occur in the roles of production team personnel and medical advisors.

Therefore, he must assume the role of a super-secretary, and comes under the dominance of the content-wise but film-ignorant medical men who ply him with reading material which is absorbable only with difficulty.

On their parts, the medical advisors are sure of their facts and confident that their experience in conventional teaching justifies their great pressure on the writer to organize the film as an airtight lecture just like the one they've often given themselves. The writer himself usually thinks this is a logical film format for medical subjects, since such films are legion. And he succumbs without too much protest.

3. *Script*. When the writer has prepared his first draft plan, or "script," the advisor or committee usually thinks that the special target of criticism is the rough draft of the narration. Unless simple drawings are made to represent every important scene (story boarding), the written visualization is tacitly assumed to be something which is as secondary as slides.

4. *Production*. When the writer turns over his final "approved" script to the director, cameraman and crew (e.g. the film construction company), the narration has often already been given the quick freeze. The pictures now become the playground for the film director, who has a schedule and contract to meet, a long series of disjointed shots to take, animation and titles to complete.

5. *Assembly*. When the footage has been shot for editing, the reality of visual language becomes even more obvious. In a splendid cinemicrographic sequence on the development of the chick heart and blood vessels (Blandau, University of Washington, "Development of the Normal Heart") where are the orientations and pointing devices required to make such

complex embryological marvels comprehensible to student eyes and minds? In an illuminating microscopic examination of the structures seen in the membranes of a bat's wing (Nicoll and Webb, Indiana University, "Subcutaneous Blood Flow in the Bat") where is the specific orientation which alone can make intelligible a tour of this strange anatomical world? In a surgical film report on an end-to-end anastomosis of renal vein to portal vein (Blake-more, Sturgis) where is coverage of the crucial dissection of the portal vein and vena cava? In an exciting split screen presentation of living dog heart valves in motion (Smith, Essex and Baldes, Mayo Clinic, "The Movements of the Valves of the Heart"), who can focus his eyes to precise observations on so busy a screen?

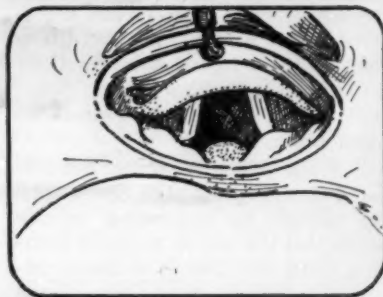
Sometimes the necessary visual devices can be added. But often the film editor can do little with the disconnected shots which were made ostensibly to illustrate phrases, sentences and paragraphs of the narration. She must content herself with patching and fitting.

6. *Narration*. When the narration is to be rewritten for recording, the image of the lecture rears its articulate head once more. With the writer, the medical advisor labors long to get every last nicety into the wording, not realizing that he must write directly to the pictures.⁵ He also is quite unaware that most of his cautiously balanced words won't be precisely recorded by his student hearers because the often poorly considered pictures are so much more forceful. Unaware, he does not hesitate to discuss material before or after it is actually seen, thus creating a dissociation of eye-ear stimuli which interferes seriously with

Photo of post-polio patient, with tracheotomy (right). Narration: "If these secretions cannot be removed by lowering the patient's head or by suctioning, a . . ."



Mirror laryngoscopic shot of normal larynx (right). "...tracheotomy is essential to provide without interruption an adequate passage for free flow of air and to prevent aspiration of accumulated fluids in the lower pharynx . . . etc."



THE DRAWINGS above show dissociation between pictures and narration. The example is redrawn from "A Study of Vocal Cord Abnormalities Following Bulbar Poliomyelitis," University of Minnesota Audio-Visual Service. The narration might have been linked by direct writing to the pictures, perhaps as follows: "This patient's tracheotomy was necessary to prevent aspiration of fluids which accumulate in her pharynx (picture at top) . . . and to provide, as through a normal laryngeal airway, a free flow of air . . . (picture at bottom)."

student comprehension (see illustration). In sum, a heavyweight lecture has been written as the narration.

7. *Release Prints.* When the titles are prepared, the opticals inserted, and prints run off, the released film composite is now conceived to be a kind of substitute lecturer in a can. This canned lecturer is able to go before county medical societies, hospital staff groups or medical student classes and talk and talk and talk, with a run of music behind the lead titles, a few illustrations in motion to liven things up a bit, and some cartoons à la Disney.

A Description of the Motion Picture Illustrated Lecture

The genus of illustrated motion

picture lectures actually appears to suffer from an acute inflammation with words, which we may term filmo-verbalitis. The familiar tetralogy is there: tumor, calor and rubor of words, but dolor in the hearts of all skilled film workers.

Most exaggerated form of the illustrated lecture genus is perhaps the illustrated monograph, typified by "Angina Pectoris," a 66-minute opus by J. E. F. Riseman, made by Harvard Film Service in 1942. The solidity and validity of the weighty narration's scientific data only underlines the almost purely illustrational nature of the pictures.

The illustrated textbook chapter is best exemplified by a large number of films produced by J. P. Hackel in conjunction with various medical ad-

visors. These self-styled "Medical Films that Teach" possess acute filmo-verbalitis. Titles actually state that the films seek to be textbook chapters on film. In certain of these films ("Management of The Failing Heart" and "Arterial Blood Pressure," among others) words on the sound track begin when the first titles are seen (but without mentioning the titles), and flow ever onward without a moment's silence until the end titles too have passed. In these films dissociation of word and picture is very common. The sound track, with the projection lamp off, is a reasonably intelligible if verbose lecture. The pictures, with sound off, are in most sequences a pictorial hash. When words and pictures are together, the pictures often merely confuse the lecture.

Medical lectures illustrated by film shots are the type species of the genus. Some of the end products are proficient, where honest film skills succeed in carrying to approval and usefulness the concentrated narration and underlying lecture organization. Such are R. F. Rushmer's "Acyanotic Congenital Heart Disease" and "Cyanotic Congenital Heart Disease" (University of Washington). At the other extreme are confusing if noble efforts like the Army's "Inside the Cell: Enzymes In Intracellular Chemistry" and Armour Company's two pure still lifes: "Bone Marrow" and "Hemopoietic Principle" (Mervin LaRue). In between, however, fall the greatest number of productions, some of which may be mentioned as typical. The Army's "Vascular Injuries" has an authentic narrative, but a spurious visualization. Cutter Laboratories' "Communicable Diseases" (Moss Film Productions), an orientational lecture on a sound track (carrying right

through the sectional titles), is a visual pot-pourri of colorful illustrations. Wyeth's "Clinical Uses of Hyaluronidase" (Worcester Film Laboratory) is a useful film report, but also a wordy, illustrated lecture interspersed with moments of visual lucidity whenever methods are demonstrated.

The motion picture illustrated lecture on silent film is not rare as a sub-species. In these cases the lecture occurs in elongated titles interspersed with relatively brief motion picture illustrations. M. H. Knisely's "Knowlesi Malaria" is typical. C. S. Beck and R. M. Hosler's "Resuscitation of Patients Who Die in the Operating Room" (Wolfe) is a modified type.

A very common species shows a lecturer on the screen who illustrates his talk with charts or still pictures during the course of his lectures. Good direction and first-class illustrations can sometimes salvage this usually boring presentational method. Wyeth's "The Use of Digitalis In Heart Failure" (Transfilm) is reasonably well handled, whereas Linde Air Products Company's "Oxygen Therapy In Heart Failure" (Castle Films) is inept. Wyeth's "The Teleclinics" (Audio) and the American Medical Association's "They Also Serve" (Jam Handy) may be mentioned in passing as examples. Typical are the long film series sponsored at one time by Mead Johnson and Company; one example, "Feeding the Infant during the First Year," displays a distinguished lecturer, Dr. Alan Brown, delivering first-class words to the point of ennui. The five films of G. D. Searle Company's "The Heart" series (Kling Studios) are another example of a worthy idea and good content hobbled with the lecturer format. Latterly, television

has greatly exaggerated the worth of this method of presentation. Radio writers converted to television could not fairly be expected to have motion picture perspective; but it is amusing to have TV producers call this a "new type of motion picture." Television's vaunted "immediacy" assists the TV lecturer; the same performance on film, lacking immediacy, is usually only soporific; indeed, TV-saturated audiences may well find such films almost narcotic.

The lecturer-seminar or illustrated motion picture symposium approach is another species hallowed by the customs of medical meetings and radio round tables. It depends for its success upon the impact of personalities on the screen. On film, as in E. R. Squibb and Sons' "Malnutrition In The Hospital Patient" (Fordel Films) and "Modern Nutrition" (A. P. Lane) the force of medical personalities is very greatly diminished. That Sandoz Pharmaceuticals is now doing the Sandoz Seminar Series, with T. R. Conlan and Associates, reflects the fact that newer producers of the TV age are little aware of a long and instructive antecedent film experience.

Some Classified Characteristics of Filmo-Verbalitis

The genus of motion picture illustrated lectures, in all its variations, can be observed to have the following general and/or specific qualities.

1. The words are dominant, narration in sound films, titles in silent ones. An easy rule-of-thumb for sound films is this: if the clarity of the message is improved by turning off the pictures and listening to the sound alone, this is pathognomonic.

2. The pictures are secondary. A corollary rule-of-thumb is this: if the sound track is turned off, the

pictures become a puzzle of unfitted pieces.

3. The pace of the film is determined by the words, not by the rate of comprehension of the pictures. This is very conspicuous, for an example, in Upjohn Company's "Heparin in the Prevention and Treatment of Thrombosis" (Jam Handy).

4. Organization of content is primarily in verbal and intellectual, not visual, terms.

5. The pictures, in a considerable percentage of the total footage, are purely space-filling, and bear only general, or even very remote relationship to the facts being enunciated from the sound track. This produces frequent dissociation between the pictures seen and the words heard.

6. A relatively high proportion of materials poorly suited to motion picture presentation is included in both sound track and screen images, usually for the sake of completeness of the verbal message. Often titles are seen very heavily in sound films.

The Illustrated Film Lecture in Transition

There is no question that the bumper crop of illustrated film lectures has played a distinct and useful role in postgraduate medical education. At the same time there is accumulating evidence that this phase of medical film production is in healthy evolution, thanks to many authors', producers', and teachers' experiences.

The disciplines of extensive animation often force the original lecture of the script to become a didactic narration matched to the drawings. Such apparently are Eli Lilly Company's "The Kidney In Health" (Mervin LaRue), and the American Academy of Ophthalmology and Otolaryngology's "The Embryology of

The Eye" (Sturgis-Grant). In other cases competent film personnel exercise their skills almost in subversion of the sponsors' and advisors' demands for a dominant lecture narration. For example, in Charles Pfizer Company's "The Antibiotics And Terramycin" (Churchill-Wexler), handsome flowing film images are anomalously bound to heavy medical prose.

The task for producers today is to attain a nice balance between the content and the medium of expression. The sheer duration and attrition of teaching film production afford producers the opportunity to educate their advisors in the role and methods of visual language while they in turn try hard to acquire a limited specialization in the scientific materials. More and more frequently there will emerge films whose narration, however heavy and lecturish, at least speaks of what is actually on the screen and little else. In the final analysis, the principal issue is whether words dominate the teaching presentation from the loudspeaker, or whether pictures in motion run it properly from the screen. We can trust the classroom teacher from there onward.

The Sole Remedy: Visual Literacy

There is one road to the production of good motion picture teaching in medicine, and it is built of visual literacy, hard work and creative imagination. Some road signs may be helpful.

1. In medicine, *fact is king*. This is the first law and the supreme law: that the producer must with the utmost precision seek to present facts as they are presently considered, not more, not less. Only within the confines of known fact can presentational skills have their play.

2. The pictures are by all odds more important than the words, which only fortify the pictures. Medical films provide learning by *seeing*, secondarily assisted by hearing or reading.

3. There must be *visual orientation* adequate for the audience, not for the specialist advisor. The lack of true visual orientation, however simple, never can be filled with words.

4. *Visual coverage* of essential action will only occur if there is thoughtful pre-planning plus intelligent, on-the-spot shooting. This latter can occur only when cameraman, director and advisor have the judgment of honest mutual knowledge.

5. *Visual pointing* is achieved during shooting primarily by closeups which limit the focus of attention. During film assembly, pointing is achieved by superimpositions and by other devices. The eye is led to its screen target by every pertinent method.

6. *Visual bridges* for changes in time and space are accounted for during shooting by changes of camera angle or lens distance, whenever action becomes discontinuous. During editing, dissolves, fades and other optical devices are added in order to suitably punctuate the sequences.

Because of the burdens of the lecture format so popular with the advisors, it is well for the script writer to avoid writing anything but a scratch narration, concentrating rather on pictures in the form of a storyboard, and seeking the best message format consonant with the content, the money and the skill. Persistence with the medical advisors can help them toward understanding of the peculiar virtues and

Illustrated Lectures in Motion Pictures

disabilities of motion pictures. Although the advisor is usually sensitive regarding his own medical specialist qualifications, it takes time for him to recognize the hard-won specialization of medical film production. And if the worst comes to the worst, and an illustrated lecture it must be, the final narration is the rearguard action where at least didactic words matching the screen can sound comfortably like the expert's voice as he orates from the podium.

Summary

Illustrated motion picture lectures occasionally may be the method of choice in the production of teaching films. But the carryover of verbal traditions of education into the motion picture field up to this time has created a misconception of the proper use of the film medium, a misconception which not only has obstructed the development of visual literacy in medical films, but which has created the phenomenon of filmo-verbalitis, the talking-talking-talking motion picture. The process of making medical motion pictures is being freed from its slavish imitation of the

conventions of teaching by words; e.g., from the formats of lecture, textbook, monograph and essay. Producers are learning to think in terms of the visual logic, continuity and limitations inherent in each subject. As evolution occurs, medical advisors will gradually learn to think in terms of pictorial teaching rather than tongue teaching. Teachers will come to expect of films the specific pictorial messages in action which they can give so well, and conversely, will expect to speak where words are the superior vehicle of expression.

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Faculty and student judgment as well as self-appraisal are the basis for sound

Staff Evaluation

PAUL G. ROOFE

THE EVALUATION of people is a necessary and continuous process in all phases of our democracy. Education has its roots in the biological and social aspects of human endeavor. The case history technique, long used in the medical profession, is now a recognized tool in the field of human relations.

In academic institutions the once-a-year staff evaluations have a three-fold purpose: (1) to indicate to the individual his own progress, (2) to satisfy the administration that all departments are moving forward in a harmonious manner, and (3) to justify a request for personal recognition to the staff member in the form of a raise in rank or an increase in salary.

Performance is the key by which men are judged. The manner by which such judgment is made varies among the individual institutions. And in the present-day institution, judgment has become the value placement of all the staff.

In modern scientific life we often lose sight of the fact that the value of our endeavor is performance on the part of the individual plus the judgment of men in the same and related fields. Value in this sense has a place in the scheme of things as recognized in scientific progress.

Rather early in their careers, most scientists realize that all human behavior, including the choice of a

scientific problem and its method of solution, is "value" to the one making the choice and executing the project. Value, the sum total of performance and judgment, then is determined by the satisfaction to the *individual*, which makes for good performance, and the judgment which is placed upon the performance by those qualified to judge.

What Is Evaluation?

When an administrator or a group of administrators evaluate a staff member their decisions carry more than perfunctory handling of the immediate situation. Of personal importance to the man under consideration is the satisfaction of recognition, an opportunity for reflective thinking and sharing of successes and failures, salary increase and promotion in rank. The evaluation is social in the sense that society is going to be influenced in one way or another, for no one lives in a vacuum.

Evaluation of another colleague's performance, then, is a serious matter. Judgment must be made in an impartial and objective manner. Error is less likely if a small group of selected personnel is concerned rather than one individual. While it is a safe assumption that all staff members have the interest of the department at heart, the senior staff members, through tenure and proved ability, and through anxiety for the maintenance of professional standards, should accept responsibility

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Staff Evaluation

with the chairman for making evaluation of junior staff members. No department is "stronger than its weakest link"; therefore, the chairman, the senior staff and the junior staff all have a common stake.

Staff evaluation, then, is a judgment. It is recognition of the value of the man to the institution which he serves and to the society in which he operates. In a democratic society this evaluation is less harsh and arbitrary, and carries with it a sympathetic understanding not possible under forms of autocratic authority.

In an evaluation there can be no line drawn between personal and professional integrity. The performance of duty should give the individual satisfaction from a personal standpoint. When the individual is motivated by an enlightened self-interest in which he sees himself in the center of a pattern of concentric circles, he is carried into the wider interests of related fields. Society really benefits for behavior then becomes social.

Each staff member to be evaluated should be interviewed formally or informally, thus giving him the opportunity to express his opinion of his own performance in the past and his plans for the future. In any academic institution the two broad fields to be scrutinized are research and teaching. If a person is hired for teaching, that should be his job and his performance should be superior rather than good. The same should hold true for the research worker. The many institutions of higher learning that demand a combination of teaching and research, however, must have competency in both fields. And in both fields, the staff member must recognize his relationship with the student. His demeanor, his scholarship, his inspiration, his attitude

and even his grooming carry weight.

The individual cannot evaluate his own work legitimately, much less the investigation of another person, unless he knows the literature in the field. Thus, it is necessary to rely upon the publications in journals of unquestioned repute. Editorial boards place articles submitted for publication in the hands of those best equipped to review them. Publications in such journals then become a reliable index to an individual's proved ability.

Quality research is not gauged by the number of publications, however. To evaluate the situation in which publication may be delayed for years demands study and insight into specific cases. Administrators grant that some workers are erratic, working furiously for periods to be followed by slumps; much depends on the type of problem and availability of materials. Needless to say, no individual should be permitted to secure tenure without productive results. No tenure is so permanent that ineffectiveness need be tolerated. Such lethargy is neither fair to the staff member nor to the public he serves.

In the field of teaching the evaluation is not so complicated. Do not all individuals instinctively desire to communicate their findings to their fellow-men? Thus, membership and active participation in learned societies becomes an excellent index to the individual's interests and activities. A departmental chairman closely associated with his colleagues in various local organizations finds that he gains personally and also is enabled to see at first hand the accomplishments of his fellow workers. The same situation holds for the teacher. Good teaching, except in rare cases, is associated with good research. This is applicable to all fields

EVALUATION QUESTIONNAIRE

Campus Affairs Committee

Course and Teacher Evaluation

Dept.	Course No.	Course Title	Instructor
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Please consider carefully your responses to this questionnaire. The information on it will be available to your instructor in this course after final examinations in order to help him improve his professional skill. Feel free to omit any information which might identify you.

Check one or more reasons for taking this course: <input type="checkbox"/> In my major field. <input type="checkbox"/> Fills a requirement. <input type="checkbox"/> Open hour. <input type="checkbox"/> Recommended to me. <input type="checkbox"/> Wanted this instructor. <input type="checkbox"/> Interested in subject. <input type="checkbox"/> Other.	School enrolled in _____ Classification _____ Major _____ Age _____ Sex _____
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Instructions: Please check once for each item, if applicable, in the appropriate column. A check in the left-hand column should represent the most favorable response, one in the right-hand column the most unfavorable unless otherwise specified (see Nos. 3, 4). Space is provided on the reverse side to explain further your responses.

	Excellent Most Favorable	Good	Above Average	Fair—Average Moderate	Poor	Below Average	Unsatisfactory None—Very Poor
1. Contribution of TEXTS recommended for purchase or use.....							
2. Contribution of OUTSIDE READINGS, EXERCISES, PROJECTS, etc.....							
3. DIFFICULTY of course material for you. (Left-hand column—very difficult; right-hand column—very easy.)							
4. VOLUME OF WORK compared to credit hours. (Left-hand column—too much; right-hand column—too little.).....							
5. USEFULNESS of course toward your vocational objectives.....							
6. CULTURAL VALUE of course to you.....							
7. ORGANIZATION, SCHEDULING, COVERAGE of course content.....							
8. Your GENERAL INTEREST in course content.....							
9. Instructor's ability to STIMULATE your interest and effort.....							
10. Instructor's ability to RELATE course to other subjects.....							
11. CLARITY OF EXPRESSION by the instructor.....							
12. Type and fairness of EXAMINATIONS.....							
13. Confidence in the ability of the instructor to assign you a FAIR AND ACCURATE GRADE.....							
14. Your WILLINGNESS TO TAKE ANOTHER COURSE with this instructor, if possible.....							
15. Personal skill of the instructor in CONDUCTING the class period, lecture, discussion, or lab.....							
16. RELATIONSHIP with the instructor OUTSIDE OF CLASS—Appreciation of students' problems, etc.....							

of learning: languages, history, science, etc.

Just how much weight student evaluation should carry is debatable. It cannot be ignored. Evaluation

forms can be used by the student affairs committee for the purpose of allowing students to place an appraisal of the course and the teacher.

The Campus Affairs Committee at

Staff Evaluation

the University of Kansas distributed a questionnaire (see page 41) to all classes in the spring of 1950. In faculty discussions later, the consensus was that the mature and intelligent students presented a reasonable evaluation. A teacher who gives satisfaction to students and administration must be an avid reader in his own and related fields; he must be sensitive to student reactions and progress; he must be meticulous in the mechanics of grading and, above all, he must inspire the students to want to learn and not thwart the learning process.

Administrative officers within the medical school do not have a well-designed form of questionnaire or tool for collecting significant data to use for staff evaluation. In business and industry, where supervisors are in constant touch with the entire staff and performance is measured largely by output, the yardstick is simple. Educators do not aspire to such accuracy for the human element is much too variable. Evaluation in most departments is cumbersome, slightly inefficient and, at the same time, wholesome. The individual's own colleagues are best equipped to know his ability and performance. How to use a staff in this manner democratically and impartially is a problem in human relations.

Faculty Check-List

In the present period of activity among medical school faculties to adjust the curriculum to integrate the teaching of various subjects, it is imperative to evaluate the faculty. The individual must be placed where he can give the most to the students. Students have a right to expect superior effort from any staff member.

The following outline may serve as a guide in an informal way to evaluate the staff member.

I. Research:

1. Problems—those carried over, current, anticipated.
 - a. Progress.
 - b. Data collected.
 - c. How available for publication.
2. Time spent daily by:
 - a. Staff members.
 - b. Assistants.
3. Professional advancement:
 - a. Membership in societies.
 - b. Active participation.
 - c. Literature read: (a) own fields, (b) related fields.
 - d. Journals taken.
 - e. Library work.
 - f. Preparation for other courses.

II. Teaching:

1. Classes:
 - a. Organization.
 - b. Content.
 - c. Presentation.
2. Preparation.
3. Student response.

III. Efforts as expressed through extra-curricular activity:

1. Extra hours.
2. Reading.
3. Community activity.
4. Courses submitted.

IV. Self-evaluation of own advancement.

V. Evaluation from other departmental colleagues.

All staffs should present a united front and make teaching an enriching experience. The individual should accept his position with honor among his colleagues and in the university community. His family and friends will appreciate the professional integrity and human values that he holds as his birthright. As adults we should be proficient in the discipline of scientific study, but with true humility we should be prepared to acknowledge our own shortcomings and grow with our profession.

Folk Medicine and Medical Practice

LYLE SAUNDERS and GORDON W. HEWES

THE PRACTICE OF MEDICINE, in whatever form it may take, is a social activity. Inevitably it involves interaction between two or more socially conditioned human beings. Invariably it takes place within a social system which defines the roles the participants may take, specifies the kinds of behavior appropriate to those roles, and provides the sets of values and orientations in terms of which the actors are motivated.*

In the practice of medicine, as in any other area of human behavior, the outcome of any interactive situation is a function of the attitudes, values, cognitions and expectations both or all the participants bring to the situation and of what all expect to get out of it. Thus, in the relationship between a doctor and a patient, what goes on in the interaction, what satisfactions each derive from the relationship and what other relationship situations eventuate are determined not only by what the doctor brings to the relationship, but also what the patient brings.

The patient is not, as is sometimes supposed, a passive, uninformed, completely receptive partner in the relationship, but an active

participant with his own notions about what is wrong with him and what could or should be done about it. He also has his own ideas of how far he will go in accepting the advice and direction given by the doctor. It is the patient who makes the first diagnosis and the first assessment of the relative severity of his condition. It is the patient or some member of his family who initiates contact with the doctor; frequently only after alternative procedures have been considered or tried. Thus, the first reference point for the identification of an illness, the first steps toward cure or relief and possibly a good deal of the subsequent activity with respect to the illness are likely to derive from that body of belief and practice which we know as folk medicine.

The term folk medicine is particularly thought of as referring mainly to the esoteric and bizarre health practices of ancient or primitive peoples. But the concept is equally applicable to that vast body of belief in our own culture, lying partly within and partly outside the field of scientific medicine that is available to and used by laymen and "marginal

*In more simple terms: in the practice of medicine, as in all other areas of human behavior, what is done, who does it, and why (i.e., for what reasons) it is done are largely matters of social prescription.

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professionals" in the diagnosis and treatment of ailments.

It is a truism that all cultures have among their elements and patterns a body of beliefs and practices centering in the recognition and treatment of illness. In our culture there are two interrelated sets of such beliefs and practices: scientific medicine—that which, by the methods of science, is systematically developed, disseminated and practiced by "legitimate professionals" in medical schools, laboratories, clinics, and hospitals—and folk medicine—that which, informally developed and disseminated, is more or less the common property of everybody in the culture. The two cannot be sharply differentiated, since many elements are common to both.* What probably distinguishes them is the emphasis in scientific medicine on understanding cause and effect relationships in illness and recovery and the relative lack of such an emphasis in folk medicine.

It is easy to see that scientific medical practices do not even begin to encompass the entire range of beliefs and practices dealing with illness and curing within our culture. There are, for example, aside from qualified physicians at least 50 different kinds of persons from whom one may seek medical advice or treatment. A person may consult somebody (a druggist, an electrotherapist, a naturopath), may visit an institution (a shrine, a hot spring, a gymnasium, a Turkish bath), may change his residence, may purchase and use an appliance (a sun lamp, an elastic stocking, a hot water bottle, an exercising

machine), may seek relief in drugs (Hadacol, Lydia Pinkham's Vegetable Compound, Carter's Liver Pills), may change his diet (more or fewer vegetables, nuts, gravies, starches, fruits), may choose a household remedy (bicarbonate of soda, salt, vinegar, oil of cloves), may follow a procedure (sun-bathing, cold baths, eye exercises, prayer), or may turn to the written word (a home medical book, a newspaper, a copy of "Readers Digest") for information and advice. All of these and innumerable other choices may fall outside the field of scientific medicine and can be made without any contact with a licensed physician.

Folk Beliefs

Although there is vast literature on folk medicine, there has been relatively little attention given to it and little use made of available information by professionally trained medical personnel. Folk medicine, when it is considered at all, is likely to be thought of as a curious survival, having about the same relation to medical science that alchemy has to chemistry. Medical personnel seldom have any systematic knowledge of the folk medicine of their own or other cultures, and no sharp awareness of the extent to which folk medical ideas and practices permeate our culture and influence behavior with respect to illness.

Except when the physician lives and works in a cultural environment radically different from his own, he is not likely to realize the extent to which the folk medical beliefs of his patients modify their responses to their symptoms and to his therapeutic procedures. It is perhaps with patients who differ from the physician only in subcultural orientation (i. e., patients who are members of

*There is a constant two-way interchange between the two. Remedies developed by scientific medicine become part of the pharmacopeia of folk medicine (e.g., the use of aspirin to relieve minor aches and pains); others with a long history of folk use are "discovered," analyzed, tested and ultimately used in scientific medicine (e.g., opium, quinine, cocaine).

a social class different from that of the physician or of a different ethnic group partially sharing his culture) that the "blind spot" of the physician with respect to the folk medical beliefs of his patients may most seriously interfere with the establishment of an effective therapeutic relationship. Here the difference in medical knowledge and attitudes may lead to suspicion, hostility and distrust of the doctor, who may not understand the necessity for being asked apparently irrelevant questions; the need for elaborate and time-consuming laboratory procedures, the delay in establishing a definitive diagnosis and instituting treatment. The doctor feels impatient, annoyed and impeded when the patient fails to follow his advice or to cooperate in the treatment process.

The folk medical beliefs of patients inevitably influence their relations with physicians. When the doctor does not recognize the existence of such beliefs or persists in seeing them as evidence of ignorance or superstition, the influence is likely to be an adverse one. When the doctor is aware of folk beliefs and sensitive to the meaning they may have for patients, the beliefs can be used by him in attaining the ends he seeks in the relationship. Recognition and understanding by the physician of folk medical beliefs and practices does not mean that such beliefs and practices must be accepted as scientifically valid. It is only necessary to recognize that they exist, that they can influence the outcome of therapy in many cases, and that they can sometimes be used to the advantage of the patient.

Medical Viewpoint

The prevalent attitude of many practitioners of medicine toward folk

medicine—when its existence is recognized at all—is frequently one of attack by such direct means as exposure or ridicule or by resort to "educational" measures designed to eliminate what is considered to be mainly medical ignorance. Such an approach is likely to be less harmful to the persistence of folk medical beliefs than it is to the quality of the relationship between the physician and his patient, and is more effective in driving patients deeper into a dependence on folk medicine than drawing them into the folds of the enlightened followers of science.

Rather than being mere ignorance or a random collection of superstitious notions, folk medical beliefs constitute a fairly well-organized and reasonably consistent theory of medicine. Rooted in time and tested by the experience of many generations, they are tenaciously held.* Success in treatment is taken as proof of their validity; failure is rationalized or ignored.

In many respects, folk medical beliefs are similar to religious beliefs and are almost as impervious to rational argument, demonstration of their error, ridicule or other forms of direct attack. The fact that a large proportion of the people who share the folk medical traditions of our culture are also receptive to scientific medicine is no indication that the older beliefs are being rapidly supplanted by the new, but rather the new is constantly fitted and adjusted to the old. Traditional beliefs are given up very slowly and many persist almost indefinitely, along with the latest in medical advances. Witchcraft, for example, may continue to be regarded as a basic cause of disease even after the role of mi-

*No small part of their appeal is the fact that they do have a good deal of functional value.

croorganisms as causative agents is well understood and accepted. Treatment procedures which are frankly magical in nature may be used along with the latest techniques, if not with the physician's knowledge and consent, then without them and in defiance of him.†

Scientific knowledge even may reinforce folk beliefs and apparently even confirm them as, for example, when a people who believe disease is caused by animals in the body are shown microorganisms under a microscope or have the germ theory of disease explained to them.* The ability of folk medicine to absorb and assimilate new ideas and new practices is almost limitless, and folk medicine in our culture, rather than diminishing under the impact of the scientific point of view, is probably expanding and flourishing as new elements are added at a much faster rate than old ones are dropped.

The differences between scientific medicine and folk medical traditions and practices will continue indefinitely because of the phenomenon of cultural lag and the practical impossibility of a culture in which individuals can be expected to regard themselves and their illnesses and disabilities from a purely objective, rational, scientific point of view.

Practitioners of scientific medicine, however, can do much to narrow the gap by becoming aware of the content and meaning of the medical knowledge their patients bring to the patient-physician relationship, by concentrating their educational and other efforts toward the elimination of those folk beliefs and practices clearly recognized as harmful in the light of scientific knowledge, and by using the remainder of them in ways beneficial to individual patients and their families.**

In the doctor-patient relationship the primary objective of the doctor much of the time must be to motivate the patient to follow the course of treatment the doctor prescribes. This end probably can be more certainly and more effectively attained if the treatment course is determined by a knowledge of folk as well as of scientific medicine, and is thus the closest desirable approximation to the patient's own ideas of what is good treatment in his particular case.

†Many examples of the use of folk remedies by patients undergoing treatment in modern hospitals have been observed.

*In Denver, there is a widely accepted belief among Spanish-speaking patients that the medicines used in "shots" are nothing more than new forms of old familiar "weeds" that have long been used in popular medicine.

**See George Foster, editor: "A Cross-Cultural Analysis of a Technical Aid Program." Washington, D. C., Smithsonian Institution, 1951.

A Course in Experimental Pathology for Medical Students

DALE REX COMAN and CHARLES BREEDIS

SEVEN YEARS AGO a course in experimental pathology was made an integral part of the teaching program for 'second-year medical students at the University of Pennsylvania. Since then, numerous inquiries have been received as to how this course is conducted, the expense of its operation and the kinds of experiments which have been found to be best suited. This paper is an attempt to answer the questions, in the hope that other medical schools planning to start such a course may be helped by an account of some of the problems to be met.

From the time of Virchow, teachers of pathology have been aware of the importance of experiments as a means of stressing the students' realization that pathological processes are not static but ever-changing, yet the actual teaching of experimental pathology has been anything but widespread. From time to time experiments have been introduced as part of the regular curriculum, but the extent of their use has fluctuated. A review of the history of experimental pathology as a teaching method is given by Furth,¹ and there is a useful handbook on the subject by Wagoner and Custer.² Pearce at

the University of Pennsylvania,³ Moore at Washington University, and Opie at Cornell¹ initiated courses in experimental pathology for the entire class; but eventually these became restricted to selected students. Restriction defeats the purpose of the training, which is not to equip men for future research but to make pathology more valuable to men who will practice medicine.

The traditional laboratory course in pathology for medical students usually consists of studying sections with the microscope, examining gross specimens, either fresh or mounted, and attending autopsies. Under this system, although an attempt is made to correlate these various activities and to stress the inseparable relation of disturbed structure to disturbed function, the student's attention is inevitably focused upon dead, static material; he is likely to find his mind filled with "pictures" representative of a disease and to lose sight of the fact that such a picture is comparable only to a single frame removed from a moving-picture film. Although he is urged to look at several such "frames" and from them to reconstruct the entire pathological aspect of disease, and while his attention is drawn to the patient as a whole, still it is evident that the student is continually forgetting that

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pathologic events are dynamic in character and accompanied by functional as well as by morphologic changes.

Our course in experimental pathology was developed in the belief that the established value of the traditional system of teaching could be kept, and its inertness counteracted, if the student were given the opportunity to study pathologic processes directly for himself in a living creature and to attend to his animals as later he must attend to his patients.

Procedures

Pathology at the University of Pennsylvania is taught in the second year of the medical curriculum over a period of about 22 weeks. The entire class of approximately 130 students starts each day, on Monday through Thursday between 9 and 10 A.M., by listening to a lecture. Then, from 10 A.M. to 1 P.M., one-fourth of the class meets in the experimental laboratory. This time—about one-fourth of the total laboratory teaching hours—was formerly divided among the other laboratory activities. Through a more critical selection of teaching material and with less emphasis on requiring the student to memorize pictures of disease, we believe that the overall instruction in pathology has been improved.

The experimental laboratory was designed especially for this course. It is about 60 by 19 feet in size and contains eight laboratory tables, 3 by 6 feet, furnished with electric outlets. Along one of its walls is a long work bench, with sinks, gas, compressed air and electric outlets. Along the opposite wall are storage cabinets and a refrigerator.

The students are divided into

teams of approximately four members, and each team is assigned for the year to one of the tables. A set of laboratory sheets is provided for the year's work, stating the purpose of the course and describing the organization and procedures.

The student is also given a list, by title, of the 20 experiments and a schedule, with dates, indicating when they are to be performed by each of the four divisions of the class. The current list is presented here to indicate the scope of the program. To it has been added the approximate number of animals needed for each experiment for a class of about 130 students.

The selection of experiments suitable for a class of 130 students is difficult. Over the period of seven years we have tried many different experiments, some failing because they were too intricate, others because they did not convey enough of significance to interest the students. To prevent the course from becoming static, we introduced a few new experiments each year to replace others of less current interest.

The experiments, of course, cannot be aimed at advancing the frontiers of science; rather, they are self-performed demonstrations comparable to the laboratory procedures in the physiological chemistry, physiology and pharmacology laboratories. An attempt is made to correlate the experiments with other activities in the course in pathology; but some, such as the production of hepatic cirrhosis and chemical carcinogenesis, are of such long duration that they must be started early in the year regardless of the subjects then being studied.

The laboratory sheets give detailed instructions for each experiment, and references to pertinent literature.

At the beginning of each laboratory period an instructor describes in detail the techniques to be used and demonstrates carefully the proper way of handling the species of animal chosen. During the working time, the instructors and laboratory assistants go from table to table, giving help and advice where needed but avoiding unnecessary assistance. In fact, every effort is made to develop self-reliance in the students. At the end of each period an instructor goes over the work done, appraises the results and correlates newly-acquired data with those of related experiments, questioning the students and, if necessary, explaining the significance of these isolated

mechanisms in the response of the body to disease processes. Discussion among the students is encouraged. This has proved particularly valuable, since questions assure us that the total lessons implicit in the various experiments have not been lost.

Finally, near the end of the 22-week term, each quarter of the class meets for two summary periods. In these sessions, volunteers present the data obtained for each experiment by the whole class. The presentations may be illustrated by charts, graphs, lantern or microscopic slides, as well as by references to the literature, and are concluded with open discussion by students and staff members. These summary periods tie the

Schedule of Experiments

(Dates refer to Groups I, II, III & IV respectively.)

<i>Introductory Period</i>	<i>Begins</i>	<i>Ends</i>
1. Circulatory Changes (20 rabbits)	Sept. 8, 9, 10, 11	Sept. 8, 9, 10, 11
2. Liver Degeneration & Cirrhosis (32 rats)	Sept. 15, 16, 17, 18	Sept. 15, 16, 17, 18
3. Margination & Emigration of Leukocytes (32 frogs)	Sept. 22, 23, 24, 25	Jan. 5, 6, 7, 8
4. Chemotaxis of Leukocytes (Rabbit leukocytes <i>in vitro</i>)	Sept. 29, 30, Oct. 1, 2	Sept. 29, 30, Oct. 1, 2
5. Chemical Carcinogenesis (32 hamsters)	Oct. 6, 7, 8, 9	Oct. 6, 7, 8, 9
6. Arthus's Phenomenon (16 rabbits from Exp. 1)	Oct. 13, 14, 15, 16	Jan. 19, 20, 21, 22
7. Necrosis & Calcification of Kidney (32 rats)	Oct. 20, 21, 22, 23	Dec. 1, 2, 3, 4
8. Transplantation of Neoplasms (36 mice)	Oct. 27, 28, 29, 30	Dec. 15, 16, 17, 18
9. Chronic Peritonitis (32 rats)	Nov. 3, 4, 5, 6	Nov. 17, 18, 19, 20
10. Embolism of Tumor Cells (16 rabbits from Exps. 1 & 6)	Nov. 10, 11, 12, 13	Nov. 17, 18, 19, 20
11. Experimental Nephrosis (32 rats)	Nov. 17, 18, 19, 20	Dec. 8, 9, 10, 11
12. Experimental Neoplasia (16 rabbits)	Nov. 24, 25, 26, 27	Dec. 1, 2, 3, 4
13. Cardiac Hypertrophy (40 rats)	Dec. 1, 2, 3, 4	Jan. 5, 6, 7, 8
14. Phagocytosis (Rabbit leukocytes <i>in vitro</i>)	Dec. 8, 9, 10, 11	Jan. 12, 13, 14, 15
15. Alloxan Diabetes (32 rats)	Dec. 15, 16, 17, 18	Dec. 15, 16, 17, 18
16. Regeneration of Liver Tissue (32 rats)	Jan. 5, 6, 7, 8	Jan. 12, 13, 14, 15
17. Experimental Anemia (32 mice)	Jan. 12, 13, 14, 15	Jan. 26, 27, 28, 29
18. X-Irradiation (32 rats)	Jan. 19, 20, 21, 22	Jan. 26, 27, 28, 29
19. Biliary Obstruction (32 rats)	Jan. 26, 27, 28, 29	Feb. 9, 10, 11, 12
20. Reticulo-endothelial System (32 rats, including survivors from previous experiments)	Feb. 2, 3, 4, 5	Feb. 9, 10, 11, 12
	Feb. 9, 10, 11, 12	Feb. 9, 10, 11, 12

Summary Period (Student Presentations) Feb. 16, 17, 18, 19, 23, 24, 25, 26

A Course in Experimental Pathology

course together, clearing up points that may have remained unexplained. The advisability of introducing one or more summary periods earlier in the course is now under consideration and may be tried next year. This would reduce the rather heavy load now carried by the two final periods.

Some Practical Considerations

1. *Available staff members:* The full teaching time of at least two staff members and a laboratory assistant is necessary. The staff members must be proficient in experimental procedures.

2. *Space and equipment:* A separate room or rooms should be used. The course cannot properly be conducted in the general classroom. Laboratory tables with adequate electric and plumbing services and other necessary equipment are necessary.

3. *Animal quarters:* Space for the students' animals must be provided, either in the general or departmental animal quarters. A part-time assistant to the regular animal attendant is needed.

4. *Expense of operation:* Most of the major articles of equipment such as a refrigerator, centrifuge, sterilizers, glassware, surgical instruments, animal boards, an autoclave, are to be found in any properly equipped department of pathology; but it will probably be necessary for most institutions to provide student laboratory tables, stools and adequate lighting fixtures. In addition is the expense of animals, cages and food. We use no animals larger than rabbits, thus keeping the cost of purchase as well as the housing and feeding at as inexpensive a level as possible; by careful scheduling of experiments we are at times able to use the same animals in more than one experi-

ment, as indicated in the schedule of experiments (see page 49). In most instances the relatively few histologic preparations that are needed can be handled by the departmental technicians.

Exclusive of the salaries for the two staff members and their laboratory assistant, a very rough estimate of one year's running expenses for our course in experimental pathology is \$2,000. This does not include the original cost of construction of the experimental laboratory or of its permanent equipment. Also not included is the cost of the major laboratory apparatus mentioned as available for borrowing from our departmental research laboratories. The figures can be broken down as follow:

Animals	\$ 500
Food	200
Expendables (chemicals, glass- ware, etc.)	100
Miscellaneous	100
Part-time animal attendant	1200
	<hr/> \$2100

Exclusive of the salary for a part-time animal attendant, which under some conditions may not be necessary, the running expenses should not exceed \$1,000 per year. This low figure is attainable, however, only by using the equipment already present in our department, by rotating the animals as economically as possible, and by avoiding the use of larger, more expensive animals.

Starting a Course

To the departments of pathology that have asked us how to begin the organization of such a course we can give, with emphasis, this advice: Make it at once an integral part of the teaching in pathology, with the entire class participating. Let the start consist of relatively few experi-

ments (from three to six for the first year), and expansion consist of increasing their numbers and improving their quality. The problems encountered in expanding from a few students to the whole class are far harder to solve than those met in the beginning with a few experiments for the entire class and gradually increasing their number and scope.

After seven years we are convinced that a course in experimental pathology is well worth the effort, time and money. Its value in helping the student to think about disease processes as dynamic fluxes of tissue and cellular responses, and to get a clearer conception of the underlying mechanisms responsible for altera-

tions in the structure and the function of bodily tissues and organs, makes us believe it an indispensable feature of modern teaching of pathology.

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The Retentive Index of Learning of Premedical Students

J. M. ESSENBERG

INFORMAL QUIZZING of freshmen medical students reveals surprisingly low retentive power of the subjects studied in premedical courses. The explanations advanced are: (1) the major teaching, especially laboratory, is in the hands of inexperienced teachers; (2) the method of teaching is based on memory training enforced by frequent examinations.

I have noticed for a number of years that students enter medical schools with a fragmentary knowledge of the subjects studied in premedical courses. It was decided to test this impression by requesting an interview of every freshman student, at which a short informal quiz was given. This has been in practice for the last three years and the results are reported in the present paper.

Emphasis at the interviews was placed on biological subjects. The student was asked to enumerate the courses studied and state the time they were finished. In case the time lapse was more than one year, the questions submitted were elementary in nature. If the course had been finished within the past three to six months, the questions were more specific but by no means difficult.

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A few type questions may be of interest: in *embryology*, discuss the function and fate of the notochord in mammals; in *genetics*, what factors determine eye and hair color; in *comparative anatomy*, what are the major differences between the kidneys of the dogfish shark and the domestic cat, etc. The results thus obtained from the freshmen of three successive years were fairly constant and shockingly low. Approximately 70 per cent of the students failed to give intelligent answers to the questions.

Another feature observed at those interviews, which may be of interest, is the manner in which the students tend to abuse the English language. Disregarding bad diction and incorrect grammar, the mispronunciation of common biological terms was heard far too often. The term most frequently abused is dissection which is transmuted into *di section*.

If 70 per cent of the students should fail in my course, I would be forced to the following conclusions: either I am dealing with students of low intelligence or I am an exceedingly incompetent teacher. There is no difficulty in showing that we are not dealing with poor grades of students. A review of the scholastic record of those students reveals that

the grades in the courses concerned are seldom below B; most commonly being B and above. Their aptitude tests give further evidence that we are not dealing with poor students. The poor record cannot be placed at the door of any particular college or any particular instructor concerned with the education of premedical students because our students come from practically all of the states of the union. Apparently the source of difficulty experienced by students must be sought in the educational methods used.

This indeed seems to be the case. Students have pointed out that they have been continually bombarded with examinations and that the courses, particularly laboratory courses, are given by inexperienced teachers.

From this and other sources of information, it appears that examinations are abused by many premedical teachers. In some colleges, examinations are given bi-weekly, weekly and, in some instances, daily. Frequent examinations have become a "modern method" of education. The student is deprived of the natural way of study. He rushes from one examination to another by memorizing lecture and laboratory notes, etc. He lives in an atmosphere of constant fear of examinations and, as would be expected, forgets what he has memorized as soon as the examination is over. The scheme of our present-day education as formulated by the students is: "Cram, regurgitate and forget."

This method seems to be gaining in popularity. It has spread from colleges into professional schools, and it appears to be gaining ground in high schools and even in grade schools. By this method, we have mechanized the teaching process and

all we need now is a good grading machine.

Results of the Method

I have questioned some of my colleagues as to the advisability of frequent examinations. The usual answer was, "The student will not study without frequent examinations." On the inquiry if they have tried to conduct their classes with but a few examinations, the answer was "no," but they "know it won't work."

This method has done considerable damage to the student. He has spent his time and funds, including the taxpayer's money; he has finished course after course, but when it comes to a test, he has very little for his effort. The student has not learned the proper method of study. He has learned to memorize and forget, but he has not learned to associate, correlate, review and retain. He has been deprived of the cultural values of education; he has been trained but not educated.

This situation has done more damage to the teaching profession than we are willing to admit. It is not necessary to be an educator by nature or by training to hold a teaching position, nor does the individual have to have teaching experience. The teacher's major qualifications consist in some, often limited, knowledge of the subject matter and the ability to carry on with frequent examinations.

There is another factor which has tended to interfere with proper education of our students, and that is the emphasis placed on research. I do not wish to be misunderstood; I have no fault to find with research. It is a valuable asset to both teacher and student. I do, however, deplore

The Retentive Index of Learning

the fact that research is placed on a higher pedestal than teaching by school administration. The teacher often is selected on the basis of good research and not on the basis of good teaching. We seem to forget that there is no higher responsibility in our social structure than education. The moral delinquency which is only too common nowadays may illustrate the point.

Remedies

The whipping of students to study by frequent examinations is as unnecessary as it is distasteful to a true educator. Every subject is a new world to the student. It is full of curiosity and interest, and it is an intellectual challenge. The service of an educator is to arouse the slumbering abilities and interests of a student and guide him in the culture of learning. In other words, the duty of a teacher is "to open the door and put on the light." There is no keener sensation than that which results from the acquisition of knowledge and culture. Of course, it takes the teacher's time, energy and intelligence to organize and guide the teaching process, but that is the duty and the real reward of the conscientious teacher.

Examinations, few in number, have a service in the teaching process, at least until we have put our educational house in order. In laboratory courses, the teacher has ample opportunity to appraise the progress of each student as well as make each student check on his own progress. In such courses the teacher should be able to rate the student in the form of grades, etc., at the end of each course without formal examinations. However, if there is need for a final examination, it should not be one based on sheer memory but on the student's reasoning power. This should do away with memorization and reinstate the natural process of study. If premedical students must make high grades as a prerequisite for entrance into medical school, they should make better grades by this method.

I am not oblivious to the fact that we are confronted with certain economic factors over which the profession has no control and which fundamentally influence the teaching process, the teacher and the student alike. We are, however, helpless in the improvement of the economic status of the land, but we can and must strive to improve the processes concerned with student education.

Program Preview

The Sixth-Fourth Annual Meeting



THE Claridge Hotel will be 1953 headquarters for the 64th Annual Meeting of the Association.

PROGRAM PLANS have been completed for the 64th Annual Meeting of the Association of American Medical Colleges. The meeting will be held October 26-28, at the Hotel Claridge, Atlantic City, N. J.

The meeting will open with a short business session, which will be followed by the annual Presidential Address, to be delivered by Dr. Ward Darley, president of the University of Colorado and outgoing Association president. The rest of the day will be devoted to discussion of the Association-sponsored Institute on the Teaching of Physiology, Pharmacology and Biochemistry. Highlights of the institute will be described in the morning and in the afternoon eight simultaneous round table discussions of various phases the institute will be conducted.

Annual Dinner: An address by Dr.

Arthur S. Adams, president of the American Council on Education since 1951, will be a feature of the Annual Dinner on Monday evening. During the dinner program, the 1953 Borden Award in the Medical Sciences will be presented. Dr. Ashley Weech, chairman of the Committee on the Borden Award, and W. A. Wentworth, secretary of the Borden Company Foundation, will make the presentation.

Since 1947 the Association, in cooperation with the Borden Foundation, has presented the Award during the Annual Meeting for "outstanding research in medicine conducted by a member of the faculty of an affiliated college."

Tuesday: The first item of business on Tuesday will be the report of the Nominating Committee and election of officers for 1953-54. To be named

**Officers and
Executive Council**



DR. DARLEY



DR. HINSEY



DR. BOWERS



DR. TURNER



DR. MOORE



DR. DORST



DR. YOUMANS



DR. LIPPARD



DR. SMILEY

are a president-elect, vice president, secretary, treasurer and two members of the Executive Council.

Following the business session, Dr. Alfred Washburn, professor of human growth and development and director of the Child Research Council of the University of Colorado School of Medicine, will discuss "Medicine as Human Biology."

Dr. Washburn's address will be followed by discussion of the chief findings and recommendations of the Survey of Premedical Education. Dr. Aura Severinghaus, associate dean of Columbia University College of Physicians and Surgeons, will lead the discussion and members of the survey subcommittee will serve as panel members.

A second panel discussion will be held after the noontime break. Dr. John Deitrick, dean of Jefferson Medical College, will lead a panel group of survey committee members in discussion of the chief findings and recommendations of the Survey of Medical Education.

Open Hearings: Beginning at 4 P.M., Tuesday afternoon, simultaneous open hearings of annual reports of Association committees will be held. Committees and reporting chairmen are:

—Audio-Visual Education — Dr. WALTER A. BLOEDORN.

—Continuation Education—Dr. GEORGE N. AAGAARD.

—Environmental Medicine—Dr. WILLIAM W. FRYE.

—Financial Aid to Medical Education—Dr. VERNON LIPPARD.

—Graduate Medical Education—Dr. KENDALL CORBIN.

—International Relations in Medical Education—Dr. FRANCIS SCOTT SMYTH.

—Internships and Residencies—Dr. JOHN YOUMANS.

—Licensure Problems — Dr. CHARLES A. DOAN.

—Medical Care Plans—Dr. HENRY B. MULHOLLAND.

—National Emergency Planning—Dr. STOCKTON KIMBALL.

—Public Information—Dr. JOHN L. CAUGHEY.

Student Personnel Practices—Dr. CARLYLE JACOBSEN.

—Veterans Administration—Medical School Relationships—Dr. R. HUGH WOOD.

At 9 P.M., Tuesday, a special program of films will be presented by the Medical Audio-Visual Institute of the Association of American Colleges.

Wednesday: The final day of the Annual Meeting will be devoted to Association business. After roll call and approval of the minutes of the 63rd Annual Meeting, Dr. Joseph C. Hinsey will present his report as chairman of the Executive Council. This will be followed by reports of Association staff members including: report of the secretary and editor of the *Journal of MEDICAL EDUCATION* by Dr. Dean F. Smiley, report of the director of studies by John M. Stalnaker, and report of the Medical Audio-Visual Institute by Dr. David S. Ruhe. Reports of the 15 Association standing committees then will be given.

Further business to be discussed at the session includes determination of the time and place of the 65th Annual Meeting and presentation of resolutions.

The final event of the 64th Annual Meeting will be installation of new officers for the year 1953-54. Dr. Stanley Dorst, president-elect in 1952-53, will take office as president and the other newly-elected officers and Executive Council members will be inducted.

Teaching Institute

Dr. George Packer Berry, dean of Harvard Medical School, has been appointed co-chairman of the 1953 Teaching Institute on Physiology,



CHAIRMAN of the Teaching Institute on Physiology, Pharmacology and Biochemistry is Dr. Julius Comroe (left). Dr. George Packer Berry (right) is serving as co-chairman.

Pharmacology and Biochemistry, to be held at the Hotel Claridge, October 19-23, immediately preceding the Annual Meeting. Dr. Berry replaces Dr. John McK. Mitchell, dean of the University of Pennsylvania School of Medicine, who will represent the Association at the Conference on Mental Health, which will be held in Washington, D. C., during the week of the institute. Dr. Julius H. Comroe Jr. is chairman of the institute.

The list of delegates who will represent the departments of physiology, pharmacology and biochemistry of their medical schools at the institute follows:

Alabama, Emmett B. Carmichael
Albany, Harold C. Wiggers
Arkansas, Lloyd D. Seager
Baylor, Hebbel E. Hoff
Boston, Earl R. Loew
Bowman Gray, Harold D. Green
Buffalo, Wilson D. Langley
California (SF), David M. Greenberg
California (LA), Victor E. Hall
Chicago Medical, Piero P. Foa
Chicago Univ., E. M. K. Gelling
Cincinnati, George H. Acheson
Colorado, Cosmo G. Mackenzie
Columbia, Alfred Gilman

The Sixty-Fourth Annual Meeting

Cornell, Robert F. Pitts
Creighton, J. Raymond Johnson
Dartmouth, Clarence J. Campbell
Duke, Philip Handler
Einstein, Abraham White
Emory, Alfred E. Wilhelmi
Georgetown, Theodore Koppanyi
George Washington, Joseph H. Roe
Georgia, William F. Hamilton
Hahnemann, Joseph R. DiPalma
Harvard, Eric G. Ball
Howard, Walter M. Booker
Illinois, Carl C. Pfeiffer
Indiana, Sid Robinson
Iowa, Steven M. Horvath
Jefferson, Abraham Cantarow
Johns Hopkins, Albert L. Lehninger
Kansas, W. Clarke Wescoe
Louisiana, A. Sidney Harris
Louisville, John Fuller Taylor
Loyola, Hugh J. McDonald
Marquette, Harry Beckman
Maryland, William R. Amberson
Medical Evang., Raymond A. Mortensen
Meharry, Daniel T. Rolfe
Miami, Edward Larson
Michigan, A. A. Christman
Minnesota, Maurice B. Visscher
Mississippi, Arthur C. Guyton
Missouri, B. A. Westfall
Nebraska, A. R. McIntyre
New York Med., David Lehr
New York U., Severo Ochoa
N. Carolina, Thomas C. Butler
North Dakota, W. E. Cornatzer
Northwestern, John S. Gray
Ohio State, Eric Ogden
Oklahoma, Mark R. Everett
Oregon, Edward S. West
Pennsylvania, Carl F. Schmidt
Pittsburgh, I. Arthur Mirsky
Rochester, Elmer H. Stotz
St. Louis, Alrick B. Hertzman
S. Carolina, Robert P. Walton
S. Dakota, F. Ellis Kelsey
So. California, John W. Mehl
Southwestern, Andres Goth
Stanford, J. Murray Luck
State U NY (Br.), Edward Muntwyler
State U NY (Syr.), Jay Tepperman

Temple, M. J. Oppenheimer
Tennessee, Robert A. Woodbury
Texas, Chauncey D. Leake
Tufts, Halvor N. Christensen
Tulane, H. S. Mayerson
Utah, Louis S. Goodman
Vanderbilt, William J. Darby
Vermont, F. J. Sichel
Virginia Med., Sidney S. Negus
Virginia U, Chalmers L. Gemmill
Washington (Seattle), Theodore C. Ruch
Washington (St. Louis), Oliver H. Lowry
Wayne, Victor A. Drill
Western Reserve, John W. Patterson
West Virginia, Edward J. Van Liere
Wisconsin, Philip P. Cohen
Woman's, Marion Fay
Yale, C. N. H. Long
Alberta, Harold V. Rice
British Columbia, D. Harold Copp
Dalhousie, J. A. McCarter
Laval, G.-A. Bergeron
Manitoba, J. Doupe
McGill, David L. Thomson
Montreal, Eugene Robillard
Ottawa, A. B. L. Beznak
Queen's, Eldon M. Boyd
Toronto, Reginald E. Haist
Saskatchewan, L. B. Jaques
Western Ontario, Roger J. Rossiter
Philippines, Constantino P. Manahan
Puerto Rico, David B. Tyler

In addition to these 96 delegates, there will be representatives of medical school administration, of the clinical sciences and of other organizations interested in the problems of medical education. Since this will be a working conference, attendance is necessarily being restricted to a small invited group. The results and conclusions, however, will be discussed in the opening sessions of the Annual Meeting of the AAMC, Monday, October 26, and all interested are invited to attend.

Editorials and Comments

Sharing Responsibility

ADMINISTERING A MODERN medical school is a many-sided problem demanding a wide range of interests and abilities. Among the many facets of the dean's job are the following:

- The institutional organization as a separate school, as a part of the university, as a part of a medical center.

- The administrative organization with or without associate or assistant deans, a registrar, a comptroller or finance officer.

- Faculty organization with or without full faculty meetings, a faculty council made up of heads of departments, multiple faculty committees.

- Student organization with or without a student admissions committee, class organization, a student council, student activities.

- Organization of service functions such as library, animal house, machine shop, carpentry shop, photographic laboratory, audiovisual aids department, etc.

- Planning the building, renovating, upkeep of the school plant.

- Planning and arranging the teaching hospital affiliations.

- Assuming leadership in curriculum planning.

- Assuming final responsibility for arrangements for compensating full-time clinical teachers and for setting staff salary schedules.

- Keeping continuously on the lookout for opportunities to bring in strong teachers and promising students and to attract interested donors and to keep the public informed regarding current school needs and problems.

The rigorous demands made upon medical school deans are attested to by the relatively short average tenure they enjoy; i.e., about seven years.

Among our deans there are still a few who share very little responsibility but prefer to "run the whole show" more or less as a benevolent dictator. The majority of our deans, however, have long since recognized the complex character of their task and have shared responsibility for the planning as widely as they can possibly do so, thoroughly convinced that the wisest decisions result from consideration of complex or controversial problems by groups representing different disciplines, different interests and different backgrounds and training.

As evidence of the efficiency of sharing responsibility, we need only quote the instance of numerous faculty committees on curriculum which have played an important part in successfully revamping their college curriculum, or of a faculty committee led by a basic science teacher which successfully solved the problem of compensating full-time clinical teachers for its college.

There are times of emergency in the life of both medical colleges and nations when for the sake of getting essential things done, principles

of democracy and of sharing responsibility may have to be temporarily modified or even foregone. But there can be little doubt that in the long run "many heads are better than one"—at least in the planning and frequently in the execution.

Our Readers Write

Comprehensive Medicine

To the Editor:

In your February 1953 issue a brief contribution appeared under the heading of "Trends in Medical Education" signed by two of medicine's most outstanding leaders: Robert F. Loeb and Dana W. Atchley. They draw critical attention to the introduction of sociological studies which, in their opinion, "will dilute further a curriculum already heavily taxed by the rapid growth of basic scientific knowledge essential for the care of the sick individual."

Because of the importance of current, widespread discussions concerning a more comprehensive understanding of medical care and because of the prominence of these two authors, it has seemed that their comments should not be left unanswered, particularly by one who has been in part responsible for a family health advisor program "in which medical students would (they actually do) participate even during their first year."

Doctors Loeb and Atchley state that "because these disciplines (the social sciences) have not yet reached a definite maturity" they are not entitled to incorporation in the medical scene. I shall not

defend or debate the maturity of these disciplines; this would be better done by the social scientists themselves. But lack of maturity would hardly seem a worthy reason for discard; rather, it would seem to be more in the scientific tradition to explore, to investigate and to bring within the scope of medical training any values they may have.

At one point—and in many others too—we are in hearty agreement: "The 'family physician' should supersede the 'general practitioner' and it is the function of the well-trained internist to be the family physician. His role is to know the patient and his environment, to care for him and his family in health and illness . . ."

It is, however, in the methods of developing this attitude and acquiring this knowledge that we differ. Dr. Loeb proposes that students learn "to evaluate patients and their environment by means of adequate histories." But he would not, I am confident, countenance *indirect* evaluation of any other aspect of the patient's clinical condition. Diagnosis and therapeutic judgement are based upon observation. In recent years there has been a tendency to limit stu-

dent observation to the clinic, the bedside and the laboratory; the principle of observation would seem to apply with equal importance to those factors in the home and the family environment which impinge upon the individual and determine health or disease. It is here that help may come from the social scientist who, through training and experience, is familiar with the technics of evaluating environmental influences.

Those of us who are concerned with some of the newer concepts which are gaining recognition under the heading of comprehensive medicine cherish as earnestly, even though perhaps not with the same measure of success as Dr. Loeb, the "highest possible scientific level" of medical care. Our difficulty, and this we admit, is to devise for these new areas the sound methods of scientific research which have achieved such notable results and brought modern medicine to its hard-won place of high esteem. We do not have the tools to work with; we do not have adequate methods of evaluation. But we do have the conviction that these must be acquired through

diligent and careful investigation. This, it would seem, is not to abandon scientific medicine; it is rather a matter of applying familiar scientific method to the unknowns in comprehensive medical care until these too become familiar.

In support of this view I quote from Dean George Packer Berry's Presidential Address before the Association of American Medical Colleges as he, too, considers current trends in medical education:*

"Our objective as I see it, is to pursue vigorously the great opportunities offered by these experiments now going on here and there at various levels of the curriculum. Beyond this, and perhaps most important of all, they can help us to explore the structure of the curriculum in order to find ways of adapting medical education to the needs of modern life. This does not mean diluting the time-tested principles of good education; it does mean orienting teaching methods to the total patient in his setting. In brief, scientific medicine must become comprehensive medicine, yet cannot become thereby any less scientific."

John P. Hubbard, M.D.
University of Pennsylvania

*BERRY, GEORGE P.: "Medical Education in Transition," *Journ. Med. Edu.* 28 (3):17-42, March 1953.

NEWS DIGEST

Governmental Appointments

Dr. Chester Scott Keefer, professor of medicine at Boston University and physician-in-chief at Massachusetts Memorial Hospital, has been made special assistant to the secretary of health, education and welfare for health and medical affairs. He will continue in his position in Boston and serve in his new capacity on a part-time basis.

Dr. Melvin A. Casberg has been named assistant secretary of defense for health and medical affairs. He will supervise the department's medical programs and advise the secretary of defense on health policies. Dr. Casberg was formerly dean of St. Louis University Medical School. He has been serving as a special assistant to the secretary of defense for health and medical affairs.

Russell R. Larmon, professor of administration at Dartmouth College, has been appointed an assistant secretary of health, education and welfare. He has served as consultant on many New Hampshire state commissions.

Books for Israel

A cooperative project, under sponsorship of the U. S. State Department, has been set up to solicit gifts of used books for Israeli institutions. Medical, scientific and technical books are especially needed. Inability to obtain dollar exchange for their purchase in America has handicapped the purchase of these books through ordinary channels.

Medical schools who have older volumes published since 1940, may send them to Books for Israel, 115 King St., New York 1. Funds for shipment from New York to Israel have been provided by the state department.

Heads Rockefeller Group

Dr. Detlev W. Bronk, president of Johns Hopkins University, has been

elected president and chief executive officer of the Rockefeller Institute for Medical Research. For many years he has been a member of the board of scientific directors of the institute. Dr. Thomas M. Rivers, named a vice president and director, will assume the executive responsibility until Dr. Bronk leaves Johns Hopkins.

David Rockefeller, former president of the institute, was elected to the newly created post of chairman of the combined board, which was created by a merger of the board of trustees and the board of scientific directors.

New WHO Head

Dr. M. G. Candau has taken office as director general of the World Health Association, succeeding Dr. Brock Chisholm. Dr. Candau is a Brazilian who received his medical training at the School of Medicine, State of Rio de Janeiro, the University of Brazil and Johns Hopkins University. He has held various state health positions in Brazil. He joined WHO in 1950 as director of the division of organization of health services, becoming assistant director-general, department of advisory services in 1951. From 1952 to the present he was in Washington as assistant director, Pan-American Sanitary Bureau, regional office for the Americas.

NEW DIRECTORY

The 1952-53 edition of the AAMC Directory was published and distributed to the medical schools in April. Additional copies are available and will be sent upon request addressed to the secretary's office, Association of American Medical Colleges, 185 N. Wabash Ave., Chicago 1.

Fellowships, Grants, Awards

Medical Research Fellowships

The Division of Medical Sciences of the National Research Council is accepting applications for postdoctoral research fellowships for 1954-55. The awards are designed to offer research experience for promising individuals who plan investigative careers and not to provide practical experience in the clinical field. Ordinarily fellowships are not granted to persons over 35 years of age.

The following programs are announced: fellowships in cancer research; British-American exchange fellowships in cancer research; fellowships in the medical sciences; fellowships in tuberculosis; fellowships in radiological research.

Applications must be in by December 10, 1953. Details may be obtained from the Fellowship Office, National Research Council, 2101 Constitution Ave., N.W., Washington 25, D. C.

National Fund Grants

Initial grants for 1953 totaling \$1,944,151 have been awarded to the nation's 79 medical schools by the National Fund for Medical Education. Each of the 73 four-year schools received a lump sum of \$15,000 plus \$20 per undergraduate medical student, while the six two-year basic medical science schools received \$7,500 each plus \$20 per student. Added to these grants were gifts from individual physicians for designated schools.

These grants bring to \$4,764,152 the amount awarded since 1951, when the National Fund made its first awards.

Announce Blakeslee Award

Entries are being received for the second annual Howard W. Blakeslee Award of \$1,000 for outstanding scientific reporting in the field of heart

and blood vessel diseases. The award is presented by the American Heart Association to the individual whose creative efforts—in newspapers, magazines, radio, television, films or books—are judged to have contributed most to public understanding of heart and circulatory diseases.

Entries must be postmarked not later than January 15, 1954. Entry blanks and additional information may be obtained from the chairman, Managing Committee, Howard W. Blakeslee Award, American Heart Association, 44 E. 23rd St., New York 10.

Fulbright Awards

Announcement has been made of 1954-55 Fulbright awards for university lecturing and advanced research in Europe and the Near East, Japan and Pakistan. Applications for the grants must be made by October 15, 1953. Medical fields in which grants are available include: public health, tropical medicine, neurophysiology, endocrinology, surgery, parasitology, anatomy, neuroanatomy, pathology and medical research.

Further information may be obtained from the Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Ave., N.W., Washington 25, D. C.

Medical Fellowships

National Medical Fellowships, Inc. has announced the awarding of \$74,075 to 46 Negro physicians and scholars in medicine and related fields. The organization has awarded a total of \$337,958 in grants to 146 persons since the end of World War II for the improvement of Negro medical practice through education and research.

Jane Coffin Childs Fund

A report from the Jane Coffin Childs Memorial Fund for Medical Research announces that \$238,480 was appropriated between October 1952 and May 1953 for cancer research projects and fellowships. The largest grants went to Dr. Francisco Duran-Reynals, Yale, for the study of viruses in the genesis of cancer; to Dr. Harris Busch, Yale, for investigations on the metabolism of tumors in vivo; to Dr. William W. Winternitz and Dr. Cyril N. H. Long, both of Yale, for investigations on the effect of transplantable tumors on the metabolism of white rats, and to Dr. Baldwin H. Lucke, University of

Pennsylvania, for investigations on enzyme patterns in relation to the development and growth of neoplasms.

Theobald Smith Award

Nominations for the Theobald Smith Award of \$1,000 and a bronze medal for research in medical science must be received by September 15. The award is sponsored by Eli Lilly and Company of Indianapolis, under the auspices of the American Association for the Advancement of Science. Nominations should be sent to Dr. Allan D. Bass, department of pharmacology, Vanderbilt University School of Medicine, Nashville, Tenn.

Meetings

College of Surgeons

The 39th Annual Clinical Congress of the American College of Surgeons will be held in Chicago, October 5-9. More than 11,000 surgeons, physicians and others are expected to attend the meeting to participate in postgraduate courses, forums, symposiums, panel discussions, color television programs, medical motion pictures, cine clinics and exhibits, all concerned with surgery.

Subjects of the graduate courses will be pre- and postoperative care, surgery of the upper gastrointestinal tract, surgery of the small and large bowel, cardiovascular surgery, obstetrics and gynecology and trauma to the abdomen.

Dr. Fred W. Rankin, clinical professor of surgery at the University of Louisville since 1941, will be installed as ACS president for the coming year.

College Briefs

Albany Medical College

Dr. PAUL R. PATTERSON, instructor in pediatrics at Harvard, has been appointed professor of pediatrics and pediatrician-in-chief to the Albany Hospital. Dr. Patterson has been affiliated with the Kansas City General Hospital, the Research and Educational Hospitals and the college of medicine of the University of Illinois, and has served as director of the diagnostic laboratory at the Children's Medical Center, Boston.

Bowman Gray

The pathology department has received a grant of approximately \$10,800 for two years of further work on the effect of an "anti-tumor" agent, aminopterin, on guinea pig tuberculosis. The grant was made by the National Microbiological Institute from funds appropriated by Congress for research work in the country's medical schools and research foundations. Preliminary work was carried out under Dr. SIDNEY FARBER of the

Children's Hospital in Boston, and at Bowman Gray with private support. The work will be under the supervision of Dr. ROBERT PRICHARD.

Dr. HAROLD D. GREEN, professor of physiology and pharmacology, has been awarded a grant of \$4,800 to study the nature and factors leading to the production of vasoconstriction and vasodilation which develops in perfused organs. The research is being supported by the American Heart Association. Dr. Green recently also contributed a section to the newly-published "Pathology of the Heart," edited by Dr. S. E. GOULD of Wayne University College of Medicine. Dr. Green's section relates to normal and abnormal cardiac function.

University of California (S. F.)

Fifty-nine medical scientists from 20 countries have joined in the authorship of a book in tribute to Dr. ROBERT WARTENBERG, neurologist. The book, "Neurological Problems in the World in 1953," has just been published by the *Journal of Nervous and Mental Disease*.

University of California (L. A.)

The extension department is offering a course in fundamental principles of radioactivity including clinical use of radioisotopes, which is designed to meet the needs of the Atomic Energy Commission regarding the distribution of radioisotopes. The four-week course involves laboratory and lecture sessions one day a week, beginning September 16, and clinical sessions from May through June. The course will be limited to 12 registrants, who are medical school graduates.

Columbia University

Medical teachers will participate in a 10-session series of lectures for the public beginning this fall. The series, to be titled "Here's to Your Health!" will be offered through the Institute of Arts and Sciences. Some 17 medical experts will speak and answer questions regarding important health problems such as high

blood pressure, heart defects, deafness, overweight and underweight, allergies, ulcers and psychosomatic medicine.

Duke University

A new prenatal program for public patients may help reduce the number of deaths from child-bearing in this region. In a series of movies, lectures and demonstrations, the obstetrics staff is teaching mothers and fathers the facts about birth. Dr. JOHN ASHE, director of the program, conducts classes once every other week at Duke Hospital, explaining the story of reproduction and normal birth.

A grant of \$5,250 has been received from the American Heart Association for a new project by Dr. JAMES V. WARREN, professor of medicine and chief of medical service, Veterans Hospital. He will attempt to learn what happens to the circulation through the lungs when the blood pressure in the circulation to the rest of the body is changed.

George Washington University

Dr. IRA ROCKWOOD TELFORD has been named professor of anatomy and executive officer of the department of anatomy. He replaces Dr. WARREN ANDREW, who joined the Bowman Gray Medical School faculty in 1952. During the 1952-53 school term Dr. CLAUDE M. MCFALL served as acting head of the department. Since 1947, Dr. Telford has been head of the department at the University of Texas School of Dentistry, Houston.

Funds totaling \$10,186 have been granted by the Public Health Service for the study of the part played in cell activity by the sugars fructose and pentose. Dr. JOSEPH H. ROE, professor of biochemistry, is director of the project.

Harvard University

The College of Physicians of Philadelphia has awarded the Alvarenga prize for 1953 to Dr. FRANCIS D. MOORE, Mosely professor of surgery,

for his contributions to the knowledge of the changes in body metabolism following surgery.

Dr. BENJAMIN ALEXANDER, an authority on blood-clotting and hemorrhage, has been named the new associate professor of medicine at Beth Israel Hospital, Boston. He becomes part of the permanent faculty of the school conducting research and teaching at the hospital.

Johns Hopkins

Reconsidering his decision to retire, Dr. LOWELL J. REED, formerly vice president of the university and hospital, has accepted an appointment as president of the university. He succeeds Dr. DETLEV W. BRONK. The appointment is effective September 1.

University of Illinois

Dr. FRANCIS L. LEDERER, head of the department of otolaryngology, has been appointed to a two-year term on the professional advisory committee of the Division of Services for Crippled Children. The division is the official state agency established to provide medical, surgical, corrective and other services for children who are crippled.

Kansas School of Medicine

Dr. SPENCER BAYLES has joined the faculty as assistant professor of medicine and psychiatry, and chairman of the new section of psychosomatic medicine in the department of medicine.

Dr. E. GREY DIMOND, chairman of the department of medicine, has been promoted to a full professorship.

Recent grants include: \$10,000 from the Damon Runyan Memorial Fund for cancer research, to be used for the study of the underlying function, chemistry and structure of certain cancer cells; \$8,316 from the Life Insurance Medical Research Fund for research on experimental atherosclerosis under the direction of Dr. KENNETH E. JOCHIM.

A postgraduate course in medicine and surgery will be presented in cooperation with the Green County

Medical Society for six monthly sessions beginning in October.

Louisiana State University

Dr. EDGAR HULL will serve as acting dean until further notice, due to the illness of Dean WILLIAM W. FRYE.

College of Medical Evangelists

Grants totaling more than \$60,000 were awarded during the month of July. A sum of \$10,000 was granted by the U. S. Department of Health, Education and Welfare to pay expenses in the psychiatry department of a departmental secretary and several part-time teachers. All of the other grants were for research, with \$8,000 the largest amount for one project. This was awarded by the Public Health Service to Dr. BRUCE HALSTEAD of the School of Tropical and Preventive Medicine, for his experiments on poisonous fish.

Two grants were given to the physiology department for two research projects being conducted by Dr. ROSCOE BARTLETT and his associate, Dr. VERNON BOHR. The U. S. Air Force gave \$5,750 and the National Institutes of Health contributed a grant-in-aid of \$5,324.

Dr. CHARLES M. GRUBER, formerly of Jefferson Medical College, has been appointed head of the department of pharmacology.

Ninety seniors participated in the preceptorship plan last summer. They worked under the supervision of a physician for a three-week period in order to learn the routine of general practice. Preceptors for the students included physicians practicing as far away as Florida and Michigan, as well as residents of California.

The department of microbiology is now serving five counties of southern California as an approved testing laboratory for brucellosis in cattle. Approval of the laboratory has been announced by the California State Department of Agriculture. Blood samples collected by licensed veterinarians are tested for brucella antibodies, and reports are made to the veterinarian and to the state office in

Sacramento within a five-day period.

The School of Tropical and Preventive Medicine was host August 18 to 75 commissioned naval officers from all parts of the United States. They were sent to Loma Linda by the Office of Naval Research to attend a symposium on ocean survival and tropical hygiene under the direction of Dr. BRUCE HALSTEAD.

University of Michigan

Recently promoted to full professorships were Dr. A. JAMES FRENCH, of the pathology department, and Dr. JOHN F. HOLT, radiology. Dr. JAMES W. RAE JR. has been named chairman of the department of physical medicine and rehabilitation and promoted to associate professor.

University of Minnesota

The Owen H. Wangensteen Surgical Education Foundation has been established to promote advanced surgical education.

The University Hospitals opened a diagnostic clinic for multiple sclerosis on July 1. The organization of the clinic was made possible by a special grant from the state legislature to provide funds for staff. The clinic is under the supervision of the division of neurology, with Dr. CHARLES VAN BUSKIRK, assistant professor of neurology, in charge.

A 12-month course for laboratory aides—a pioneer venture by the general extension division and the college of medical sciences—will begin September 28. The course will include six months of classes on the university campus and six months of practical training in Twin-City hospital laboratories. It is intended to prepare young men and women for work as laboratory assistants to medical technologists and physicians.

The center for continuation study offers the following courses: hematology for medical technologists, October 6-7; tuberculosis for lay persons, October 12-14; rehabilitation for general physicians, October 22-24; medical jurisprudence for physicians, November 5-6.

University of Missouri

A grant of \$25,000 has been received from the Missouri Health Council to finance a study of the problem of providing medical service for the indigent population of the state. The study will be administered under the university's Institute for Research in the Social Sciences, of which Dr. C. E. LIVELY is director. Dr. WILLIAM A. SODEMAN, professor of medicine, will be a member of the technical committee during the research.

New York University (Bellevue)

Dr. L. ROYAL CHRISTENSEN, assistant professor of microbiology, will be director of the new Henry W. and Albert A. Berg Institute for Experimental Physiology, Surgery and Pathology, it has been announced. Dr. Christensen has been with the faculty of the college of medicine since 1941.

University of North Carolina

A grant of \$9,450 has been received from the American Heart Association for a continuing study of the Macacus Rhesus monkey to determine if it is a suitable experimental animal for studies on the production of hardening of the arteries, and especially for studies on cholesterol metabolism.

University of North Dakota

The U. S. Department of Health, Education and Welfare has granted \$5,400 to Dr. W. E. CORNATZER, department of biochemistry, to study the role of phospholipides in liver mitochondria.

Northwestern University

Dr. ROBERTO ORTIZ has been named recipient of the 1953 graduate fellowship in pediatric surgery. The grant will enable Dr. Ortiz, a citizen of Costa Rica, to continue his work in pediatric surgery at Children's Memorial Hospital.

University of Oregon

DONALD S. BOOTS, a student, has been awarded a \$1,000 Charles Pfizer

and Co. scholarship for the 1953-54 school year. He has completed the third year of a five-year program in which he is working toward a doctor of medicine degree and a master of science degree in anatomy. He is currently aiding in a research project in embryology under the supervision of Dr. ANTHONY A. PEARSON, head of the anatomy department.

An electrocardioscope has been purchased with funds provided by the Oregon Heart Association. The \$2,200 machine is one of two now operating in the Pacific northwest. It is being used by Dr. FREDERICK P. HAUGEN, professor and head of the division of anesthesiology, in the Doernbecher Memorial Hospital for Children, a unit of the school hospitals and clinics.

Recent gifts and grants include \$11,000 from the Helen Hay Whitney Foundation for continuing support of a research project under the direction of Dr. ROBERT A. ALDRICH of the pediatrics department.

University of Pennsylvania

Dr. KENNETH E. APPEL, professor of psychiatry, has been appointed chairman of the department succeeding Dr. EDWARD A. STRECKER, now emeritus professor of psychiatry.

The annual report of the university hospital reveals that receipts from patients totaled nearly \$750,000 less than the cost of operation during the past year, but income from other sources enabled the hospital to complete the year without a deficit. The hospital cared for 22,000 inpatients, 31,700 emergency ward calls and provided services for nearly 120,000 clinical visitors who used its outpatient department facilities.

Dr. STUART MUDD, professor of microbiology, attended the International Union of Biological Sciences meeting in Nice, France, August 17-21. He is American secretary to the union. He also attended the International Congress of Genetics, August 24-31, at Lake Como, Italy, and the International Congress of Microbiology in Rome early in September. Dr. Mudd will attend the International

Congress of Microbiology in Rome as the official representative of the Society of American Bacteriologists.

Also attending the meetings from the same department is Dr. EDWARD D. DELAMATER, research professor of dermatology and microbiology. Aided by a fellowship grant from the Gugenheim Foundation, Dr. Delamater is to remain in Europe at the conclusion of the meetings to tour leading continental medical centers for the purpose of making specialized studies of laboratory methods employed in investigations of cyto-genetics.

An award of \$4,200 has been received from the Damon Runyan Memorial Fund for studies of lipid synthesis by particle-free extracts of liver. Dr. FRANK DITURI, research fellow in physiological chemistry, will conduct the research under the direction of Dr. SAMUEL GURIN, professor of physiological chemistry.

University of Southern California

Recent promotions include: Dr. JOHN L. WEBB, head of the department of pharmacology and toxicology; Dr. JESSIE MARMORSTON and Dr. FREDERICK J. MOORE, professors of experimental medicine; Dr. PIERRE P. VIOLE, clinical professor of surgery; Dr. JAY J. CRANE and Dr. CARL F. RUSCHE, clinical professors of surgery (urology).

State University of New York (N.Y.)

Dr. RICHARD L. DAY, associate professor of pediatrics at Columbia, has been appointed professor and chairman of the department of pediatrics. Dr. CHARLES A. WEYMULLER, who has been serving as professor and chairman of the department on a part-time basis since 1936, will continue as full professor on a part-time basis.

The appointments of Dr. CHARLES W. MUELLER as clinical professor of obstetrics and gynecology, and Dr. CLIFFORD E. STOREY as clinical professor of surgery have been announced.

Dr. PATRICK JAMES FITZGERALD has been named professor and chairman of the department of pathology. He

has been assistant pathologist at Memorial Hospital and an assistant in the department of physics in the Sloan-Kettering Institute in New York. He succeeds Dr. JEAN OLIVER, who has held the position since 1949. Dr. Oliver has been granted special leave to engage in vital research for the Armed Forces Epidemiological Board on the renal lesion of epidemic hemorrhagic fever, a mysterious disease among the troops in Korea.

University of Tennessee

Dr. JAMES D. HARDY, assistant professor of surgery, has been awarded a research grant of \$8,287 by the Public Health Service. He is investigating the body's reaction to operations which are done in a series, such as certain types of chest surgery.

Dr. FRANK E. WHITACRE, chief of the division of obstetrics and gynecology, has resigned effective September 30 to accept a similar position at Vanderbilt University. He has been chief of the division since 1945.

University of Vermont

Four research grants totaling \$46,920 to members of the faculty were received recently. All four grants were made by the National Institutes of Health. Dr. EUGENE LEPESCHKIN, associate professor of experimental medicine, received \$15,380 from the National Advisory Heart Council of the Institutes. Dr. ETHAN SIMS, assistant professor of medicine and biochemistry, and Dr. KERMIT KRANTZ, assistant professor of obstetrics and gynecology, received \$12,180 for a study of renal function in pregnant women. Dr. OSCAR S. PETERSON, associate professor of radiology, received a continuance of his grant for work with rotational x-ray therapy. Dr. ARNOLD H. SCHEIN, associate professor of biochemistry, received funds for study of a chemical problem involving an attempt to purify certain enzymes.

University of Virginia

Dr. EDWIN PARTRIDGE LEHMAN, for

25 years professor and chairman of the department of surgery and gynecology and chief of the surgical service of the university hospital, retired September 1.

Dr. STEPHEN H. WATTS, professor of surgery from 1907 until his retirement in 1928, died June 7, leaving a half-million dollars to the university medical school for the establishment of the Stephen H. Watts Chair of Surgery, with any remaining income being used for research in medicine and surgery.

Washington University

Heart disease research grants totaling \$12,112 have been awarded by the American Heart Association to three physicians. They are: Dr. JOHN R. SMITH, associate professor of medicine; Dr. OLIVER H. LOWRY, professor of pharmacology and head of the department of pharmacology, and Dr. ROBERT F. FURCHGOTT, associate professor of pharmacology.

University of Wisconsin

A postgraduate course in obstetrics is scheduled for September 1-3 under the direction of Dr. JOHN W. HARRIS, professor of obstetrics and gynecology. Dr. CURTIS J. LOUND, professor and chairman of the department of obstetrics and gynecology at Rochester University, is guest faculty member for the course.

Woman's Medical College

A \$30,000 grant from the W. K. Kellogg Foundation of Battle Creek, Mich., has been made "for the purpose of developing a program of teaching and research in preventive medicine." This grant will be paid in units of \$10,000 a year. The department is under the direction of Dr. KATHERINE R. BOUCOT, professor of preventive medicine.

In August ground was broken for the \$115,000 Martha Tracy Preventive Medicine Wing—a two-story unit to house the department. It will be built on the west side of the present hospital.

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Audiovisual News

Educational TV

The University of Houston TV Station KUHT was the first educational station to begin operation. A total of 47 applications now have been filed with the Federal Communications Commission for operation of non-commercial educational stations and 17 construction permits have been granted.

The FCC has clarified the deadline on reservation of TV channels for education. The reservations continue indefinitely, although petitions for change in the table of assignments can be considered.

Dr. Harry K. Newburn, president of the University of Oregon, has been named president of the Educational Television and Radio Center, effective in October. The center, which is supported by an initial grant of \$1,500,000, will be located in Chicago. It is expected to facilitate the production and distribution of educational radio and television programs.

New Film Postal Rate Law

By signing Public Law 141, President Dwight D. Eisenhower brought into effect postal rates which give educational motion pictures the same postal status as books. Increasingly large savings in mailing costs will be realized by medical schools from the passage of this bill as increased numbers of films become utilized.

In order to assist the post office in carrying through the regulations of the new law, mailings should be addressed to the organization first and the individual second. It should be clear from addresses that mailings are to or from scientific or educational institutions organized not for profit.

Summaries of Film Reviews

Venepuncture

14 min., sd., color, 16 mm., 1952.

Common faults in venepuncture and their prevention are shown. Needles of unsatisfactory quality are compared with the characteristics of a good needle, and ruinous ways of carrying and sterilizing needles are demonstrated. Blocked needles, leaking syringes, improper syringe testing and changing of hands during venepuncture are illustrated. Proper needles, the proper kind of vein and palpation in fat arms are stressed. Correct venepuncture is analyzed and demonstrated.

In this film designed to provide motivation and facts for learning the proper execution of venepuncture, the features of good technique are systematically and effectively evolved from the common faults. As with all films on procedures, many minor criticisms of personal judgment can be made, but the subject treatment is generally valid and well-rounded. The film is distinguished by analytical, well-planned and dynamic camera work, and by an economical, tight narration.

By intelligent guidance of the eye and sheer magnification, the film brings out the important visual aspects of venepuncture, failing only to supply the essential tactile experience of actual practice. As a film for preparation of those who will be asked to do this commonplace essential of medical technology, the film can well be integrated with demonstration and practice, providing the instructor does not quarrel with details of personal preference.—*A.N. with MAVI Panel, 1953.*

Audience: Medical students, physicians, nurses, laboratory technicians.

Production Data: Sponsor: Imperial Chemical Industries, Ltd., Medical Collaboration; Bacteriology Department, St. Mary's Hospital Medical School, London; Producer: I. C. I. Film Unit; Direction and Camera: Cyril Jenkins.

Distribution: (in U. S.) Imperial Chemical Industries, Ltd., Film Library, 521 Fifth Ave., New York 17, N. Y.; Sale; Loan \$4. (service charge).

The Bone Bank

28 min., sd., color, 16 mm., 1950.

An introduction states that bone grafts originate from the patient (autogenous), from other individuals (homogenous), and from relatives (syndogenous). Preservation by chemical means or refrigeration is required. The sources of bone for preservation are discussed, and the methods of sterile refrigeration are presented in detail. A summary of the use of refrigerated homogenous bone is illustrated by surgical examples of spinal fusion, lumbosacral and hip joint arthrodeses, cavity filling for osteoma, bone cyst, Gaucher's disease and grafting for an ununited fracture. Postoperative infection rates are supported with experimental data on the fate of bone grafts during the healing process.

This film is a report of progress in the rational development of bone banks. The content is acceptable on the whole. The author's surgical skills are excellent. However, a few points should be made: the manner of bone culture violates the bacteriological "principle of aliquot parts;" e.g., that because one area shows no organisms it is safe to conclude that all parts are free from bacteria; ether as an agent of sterilization for contaminated bone is questionable; portions of operative procedures are used as illustrations, but in several cases the operative treatment shown is not always generally acceptable as the method of choice for the pathology in question; the author's inference that homogenous bone is of equal value with autogenous is not the present consensus of opinion or experiment. The film is a well conceived and well organized illustrated lecture. The photography, x-rays and animations, while well done, have little visual continuity, but rather support the message of the sound track.

The film's content and advocacy of a newer development in tissue replacement therapy make it of interest and value to orthopedists and surgeons in their training years. The five-part structure of the film permits its use in sections. But expert guidance in utilization will be helpful with all audiences, in order to give the most up-to-date range of interpretation to the content.—N.L., with M.M.S. and MAVI Panels, 1951.

Audience: Interns, residents in surgery and orthopedics.

Author: Philip D. Wilson, M.D., surgeon-in-chief, Hospital for Special Surgery, New York; **Producer:** Sturgis-Grant Productions, Inc.

Distribution: Sturgis-Grant Productions, Inc., 314 E. 46th St., N. Y., Loan or Sale.

Resuscitation of Patients Who Die in the Operating Room (of Cardiac Arrest*)

23 min., sl., color, 16 mm., 1952.

Part I, restoration of the oxygen system, opens with a patient in decedrate convulsions. The proper emergency procedure is indicated: insertion of an intratracheal tube, squeezing of an oxygen bag and cardiac massage by one of four methods whose results are demonstrated by BP tracings. Part II, restoration of the heart beat from stoppage either in standstill or ventricular fibrillation, begins with demonstrations of hearts and BP tracings. Use of intra-ventricular procaine and adrenalin, heart massage methods, electric shock with a defibrillator and rapid digitalization are demonstrated; effects are seen in BP tracings; drugs and dosages are indicated. Emergency opening of the chest is shown on a cadaver. The required emergency equipment is illustrated. "Don't and do's" of the cardiac arrest emergency (in titles) precede a picture of a survivor of such emergency treatment.

The film supports a course on resuscitation currently given by its authors, and represents the authoritative work of the Western Reserve University group. However, separated from its authors' personal presentation, the great inherent force and urgency of cardiac arrest during surgery is somewhat reduced by the flaws of the film presentation. Fragmentary visualization, lengthy titles and very uneven photography make the film a useful instrument for its makers, but also a trial film for an improved and more representative version which will have greater impact.

With all suitable medical audiences the great drama and high motivation of an OR emergency pervades the film, rising above the film's technological shortcomings. Used in conjunction with laboratory demonstrations and discussion, the essential elements of the resuscitation process will be transmitted.—D.S.R., with MAVI Panel, 1953.

Audience: Surgeons, medical students, interns and residents.

Production Data: **Authors:** Claude S. Beck, M.D., and Robert M. Hosler, M.D.; **Camerman:** Kenneth Wolfe.

Distribution: The authors, department of surgery, Western Reserve University School of Medicine, 2109 Adelbert Rd., Cleveland, Ohio. Loan.

*Our words in parenthesis.

First Aid in the Prevention of Shock
23 min., sd., b&w., 16 mm., 1950.

A soldier is struck by an auto. On arrival, army ambulance aides find a point of arterial bleeding and apply a tourniquet. At a hospital he receives emergency treatment, but grave blood loss elicits a poor prognosis. The mechanism of shock is diagrammed. A second auto accident is portrayed: an overturned truck, discovery of the injured driver by a girl and action by two passing soldiers in promptly supplying first aid including a tourniquet and emergency splinting. At the hospital the first accident case dies, the second is recovering.

Presumably for simplicity's sake, the first aid steps in the prevention of shock in two cases of hemorrhage are contrasted, somewhat unconvincingly. The handling of patients follows standard ideas of 1950; the use of the tourniquet is now considered to invite more harm than good, and is thought by many experts on trauma to be replaceable by proper methods of compression of the bleeding point or arterial supply. Presented in a semi-dramatic style of recreated accidents, in general the film moves smoothly and directly to its goals, carried along by skillful production.

For trainees in first aid, including medical students, the film is an uncomplicated lesson on first aid procedures for shock from hemorrhage. The emphasis on the use of the tourniquet, however, must be investigated by an instructor knowledgeable in current viewpoints of management. The film will be useful for courses in first aid, satisfactorily combining military and civilian needs. It will be employed best preceding a practice session; and a competent instructor will be able to expand and develop its implications into other etiologies of shock.—J.L.M. II and A.N., with MAVI Panels, 1950.

Audience: Classes in first aid.

Production Data: **Producers:** U. S. Army. **Distribution:** Commanding General, Attention: Signal Officer, Headquarters, First to Sixth Army (according to location of user) or to director, Armed Forces Institute of Pathology, 7th and Independence Ave., S. W., Washington 25, D. C., Loan, use Code No. TF 8-1659.

Functions of Carotid Sinus and Aortic Nerves

(Part I: Pressoreceptors)

39 min., sd., color, 16 mm., 1950.

After a historical introduction, the film shows the effect on blood pressure and heart rate of clamping the carotid arteries, with and without section of

one depressor nerve. The anatomy, histology and embryology of the carotid sinus and aortic nerves are demonstrated. The action of the pressoreceptors is then observed in the following experiments on the cat and rabbit: (1) stimulation of the aortic nerve, without and after vagotomy; (2) stimulation of the carotid sinus nerve, without and after vagotomy; (3) setup, equipment and technique for perfusion of the isolated carotid sinus nerve preparation, with demonstration of threshold pressure sensitivity. The self-regulatory mechanism of which the pressoreceptors form a part is discussed briefly.

The film attempts to give a rounded account of the pressoreceptors, placing the main emphasis on extensive demonstration of well-selected and varied experiments. Although repetitive in places, the observations are brought out with unusual clarity by a dynamic camera. Less successfully presented are the underlying neurophysiological considerations, for which reason familiarity with them will help the understanding of the phenomena demonstrated.

The film is well-suited for orienting the student prior to his own performance of these or related experiments in the laboratory, or as a review following laboratory exercises.

Audience: Students of medicine and physiology.

(Part II: Chemoreceptors)

32 min., sd., color, 16 mm., 1950.

A brief historical introduction is followed by an in situ demonstration of the carotid body in the dog and by diagrams of the aortic body. The setup for administering a gas mixture to a cat is shown. By means of kymograph tracings the effects of the following agents on respiration and blood pressure are observed in the intact animal and after chemoreceptor denervation: 3 per cent, 6 per cent, and 9 per cent carbon dioxide; increased hydrogen ion concentration; mild (15 per cent) and marked (5 per cent) oxygen lack; intravenous cyanide; intravenous lobeline; and intra-arterial acetylcholine. Also demonstrated are electrical stimulation of the carotid chemoreceptors and functional localization of the aortic receptors by lobeline injected through a cardiac catheter. The mechanisms of pressoreceptors and chemoreceptors are summarized.

This is an extensive record of technically well-performed experimental

observations of chemoreceptor action. However, the film does not describe the fundamental significance of the reactions of the center and the receptor cells when the effects of excess carbon dioxide and oxygen lack are observed. Because there is no physiological interpretation, the inclusion of the various drug effects appears arbitrary. The main visual emphasis of the film is on the kymographic tracings, which inevitably leads to some monotony. The film offers the student a convenient anatomical review of the chemoreceptor region but, because of lack of methodical approach, cannot serve in its own right as a teaching film on the subject.

The film is useful as a whole or in parts, provided a motion-picture demonstration of the specific experiments is felt to be desirable. If used in student teaching, proper interpretation of physiology by the instructor is required.—A.N., with MAVI Panel, 1953.

Audience: Students of medicine and physiology.

Production Data: Sponsor: Imperial Chemical Industries, London; Author: Dr. A. Schweitzer, department of physiology, University College, London; Producer: I. C. I. Film Unit; Direction and Camera: Cyril Jenkins.

Distribution: Imperial Chemical Industries, Film Library, 521 Fifth Ave., New York 17, N. Y., Sale and Loan.

Patent Ductus Arteriosus

25 min., sd., color, 16 mm., 1952 (Part 1), 1950 (Part 2).

Part I—*Physiology, Diagnosis and Clinical Considerations* illustrates, primarily in animation, the prenatal circulation and the abnormal patent postnatal ductus arteriosus. Pressure changes in heart, aorta and pulmonary arteries are shown to create anatomical and physiological alterations detectable by physical, x-ray and venous catheterization diagnoses. Causes of complications and fatalities are covered.

Part II—*Surgical Treatment* demonstrates characteristic findings in a three and a half-year-old girl preoperatively. A left anterolateral chest incision is made, and the area of the ductus is exposed. After careful dissection of the great vessels, the ductus is clamped, divided and ligated. The anatomical structures are approximated and normal closure is effected. The patient is seen postoperatively at three months and again at a year.

The first portion of the film deals with principles, the second with the performance of one of several possible tech-

niques. In part one, the structural aspects of the pathological processes are lucid, but the film presupposes familiarity with cardiac catheterization methods and applications. The diagnostic approach is not systematically treated. The operation is splendidly performed, yet important technical details are not seen. Presentation is, on the whole, of clarity and good production quality. Animation and surgical cinematography are excellent.

The first part gives a good overview of congenital patent ductus arteriosus, and will be useful, if time permits, for medical students and general practitioners. The diagnostic information transmitted to the latter group will be limited. The surgical portion will be of value to residents in surgery, especially if augmented with discussion by a cardiac surgeon.—A.N., with MAVI Panels, February 1953.

Audience: Medical students, interns, residents in surgery, general practitioners; cardiac surgeons (Part II only).

Production Data: Sponsor: E. R. Squibb & Sons; Author: George H. Humphreys II, M.D., in collaboration with the American College of Surgeons' Motion Picture Committee on Heart and Pericardium; Producer: Sturgis-Grant Productions, Inc.; Camera: Warren Sturgis; Animation: Harry Hansel.

Distribution: E. R. Squibb & Sons, 745 Fifth Ave., New York 22, N. Y., Loan.

Intra-Oral and Pharyngeal Structures and Their Movements

22 min., sd., color, 16 mm., 1950.

A 24-year-old male patient, following radical excision of a chondrosarcoma of the left maxilla, demonstrates a large healed facial defect through which oral, nasal and pharyngeal structures can be observed. With and without a transparent plastic prosthesis to provide a palatal wall, mastication and swallowing of solid and liquid foods are observed and discussed. Views of chewing, swallowing, phonation and smoking are seen and discussed with reference to muscular movements.

The first portion of this film is the spoken case history of a patient with a gross postsarcomatous surgical facial defect; the second portion is an attempt at analysis of the physiology of mastication, deglutition and phonation as repetitiously observable through the defect. Anatomy, physiology, prosthetics and phonation are mixed together without a clear line of scientific or pedagogic development, with conspicuous omissions, and with ill-considered inclusion of clinical materials. Although

the native material is rich and potentially illuminating, visual interpretation is scanty even in the presence of redundant footage. The narration is inadequate in pointing out even the obvious, while it is full of dissociations and distracting verbal filler material. Color, focus and phototechnical attributes are satisfactory.

Although this patient's surgical defect permitted extraordinary views of the mouth, pharynx and posterior nares, the film is essentially a trial film for a superior film on the anatomy and physiology of mastication and deglutition edited from the same materials. The film observations of the oropharynx might well be used alone, with sound track off, and an analytical interpretation substituted by the teacher who uses it.—A.N., with MAVI Panel, April 1952.

Audience: Maxillo-facial and oral surgeons; anatomists, physiologists; general postgraduate medical audiences; medical students.

Production Data: **Producer:** Audio-Visual Production Services, Communicable Disease Center, Public Health Service, and Medical Illustration Laboratory, for Dental Service, Veterans Administration Hospital, Chamblee, Ga.

Distribution: **Sale:** United World Films, Inc., 1445 Park Ave., New York 29, N. Y.; **Loan:** Inquire, V. A. Central Office Film Library, Motion Picture Section, U. S. Department of Agriculture, Washington 25, D. C.

Fox Gloves in Medicine

26 min., sd., color, 16 mm., 1951.

The medical history of *Digitalis purpurea* is portrayed. The chemical structure and purification of digitalis glycosides is shown, with special reference to *D. lanata* and the glycoside Digoxin. The pharmacology of Digoxin is demonstrated

in isolated perfused rabbit hearts, in normal hearts and in hearts with auricular fibrillation. The indications for Digoxin are listed. A patient with congestive failure is treated. Overdosage symptoms are enumerated. Intravenous Digoxin is shown to relieve a patient with auricular fibrillation.

As an elementary introduction to the pharmaceuticals, pharmacology and clinical effects of digitalis glycosides, the film presents a generally well-rounded account of the principles of the first two, but gives inconsistent and sketchy material on the third. The film deals almost exclusively with the sponsor's product Digoxin. In its handling of all aspects of motion picture production, the film is executed with remarkable skill. Emphasis is upon clear visualization, the narration acting only as support. Singularly graphic are the experiments on isolated hearts, along with the animation of cardiac condition.

The film effectively brings home its introductory message to students in pharmacology. For graduate physicians it may provide a pleasant and informative interlude of review. However, all instructors should preview the film, in order that discussion in terms of other glycosides may be precise.—A.N. with MAVI Panels, 1953.

Audience: Students of medicine, pharmacy and nursing.

Production Data: **Sponsor:** Burroughs Wellcome & Co., London; **Medical Adviser:** Dr. A. Hollman, University College Hospital, London; **Producers:** Wellcome Film Unit; **Direction:** Florence Anthony; **Animation:** Robert Lumley.

Distribution: (In U.S.) Burroughs Wellcome & Co., Inc., 1 Scarsdale Rd., Tuckahoe 7, N.Y., **Loan.**

Davis — Neurological Surgery

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Book Reviews

Drug Addiction Among Adolescents

Conferences sponsored by the Committee on Public Health Relations of the New York Academy of Medicine with the assistance of the Josiah Macy Jr. Foundation. The Blakiston Company, New York, Toronto, 1953. 320 pp. with index. \$4.

A report of two conferences held at the New York Academy of Medicine and sponsored by the Committee on Public Health Relations of the New York Academy of Medicine, with the assistance of the Josiah Macy Jr. Foundation. The conferences emphasize the need for more effective cooperation between the wide variety of professions and agencies which have indicated concern and responsibility in the problem of drug addiction.

In the first conference the following subjects were covered through papers, talks and discussions: recognition and classification of addiction in young people; prevailing methods of treatment; critique of treatment; need of clinical and sociological factors; control of supply and law enforcement; legislative proposals; need for integrating community action.

The report of the second conference shows clearly the fruitfulness of the kind of meeting in which free and informal discussion makes possible the meeting of minds.

Certainly no easy solution for the problem of drug addiction has resulted from these conferences. What was developed is a much clearer recognition that addiction in adolescents must be seen, not as a problem of moral degeneracy, or merely as a failure of law enforcement, but rather as one symptom of the serious deprivations suffered by many children living in large and crowded cities.

The conference chairman suggests that the continuation of drug use depends to a great extent on the euphoria the individual receives, whether it is psychological or somatic. He pointed out that there is lack of follow-up along many lines.

Because the book is a word-by-word report, the reviewer felt that it often lacked reader interest. An interesting glossary gives terms from drug-addic-

tion argot, giving the reader the secret, colorful and complex language of underworld narcotics.

E. V. Thiehoff, Kansas

The Roots of Psychotherapy

Carl A. Whitaker; Thomas P. Malone. Blakiston Company, New York, 1953. 236 pp. \$4.50.

Rarely is an attempt made to teach psychotherapy to anyone but psychiatric specialists. This is unfortunate, as most functional disorders are "treated" by the general practitioner or specialist who has had little training or experience in psychotherapy.

One reason for the lack of such teaching has been the lack of good textbooks dealing with psychological treatment and written in nontechnical language that the nonpsychiatrist can master and integrate. Whitaker and Malone have made an important contribution to the resolution of this problem with their new book. They are especially qualified to accomplish this, as they are actively engaged in the teaching of psychiatry at the Emory School of Medicine and have had extensive experience in research and therapy with children and adults suffering from most kinds of emotional disturbances.

This book is simply written in nontechnical language, has a glossary which defines the minimal number of specialized terms used and a bibliography sufficiently inclusive to permit the interested reader further reference to more detailed works.

The three major divisions are designed to present the philosophy and basis for psychotherapy, the actual process involved in psychotherapy, and a discussion of techniques employed. In the first part, called "Foundation," the role of the unconscious, or intuition as the authors define it, is presented. This is developed to show the relationship of this concept with psychoanalysis. The presentation of psychological repair as a part of adaptation is especially well developed. Included also in this section is a chapter on research in individual as well as group psychotherapy. The

latter is intelligently correlated with preventive mental hygiene at the community level. The relationship to biological systems is not neglected in the discussion of foundations for psychotherapy.

The second major division, entitled "Process," deals with the patient, as well as the therapist, as a person. Implicit in this is the importance of motivations, social roles and goals to be achieved by both parties involved in the healing process. Especially well emphasized and presented is the bilaterality of the therapeutic relationship and the importance of anxiety, aggression and communication in both the doctor and the patient. The concept of countertransference, or the feelings of the doctor for the patient, is continually emphasized as one of the major factors in the resolution of the presenting disorder. The chapters discussing the divisions of the therapeutic situation include not only the pre-interview relationship, but also the ending of therapy and post-interview activity. The symbolic phases of psychotherapy are approached from the point of view of recapitulated earlier experiences in growth and development.

The last portion of the book deals with some techniques of brief psychotherapy. Included here are suggestions for handling the various phases of a psychological relationship, as well as the possible pitfalls that can be encountered and means of dealing with these impasses.

This book is not an easy one to read and master. It requires much thought and understanding despite its comparatively few pages. However, when approached not as a "how to do it" book, it can be a meaningful and valuable experience for the medical student and the non-psychiatric practitioner of medicine as well as the psychiatrist.

George H. Pollock, *Illinois*

Histology, 2nd edition

Arthur Worth Ham, M.D., professor of anatomy in charge of histology in the faculties of medicine and dentistry, University of Toronto. J. B. Lippincott Company, Philadelphia, London, Montreal, 1953. 756 pp. with index. Illustrated. \$10.

The degree of excellence established in the previous edition is maintained in the new publication. The practical applications of histology to the practice of medicine are stressed (for example—material on bone development and re-

pair, repair of the skin by grafting, the mechanism of edema, the relation between adrenal cortical secretion and stress phenomena, etc.) The author also has made a conscientious effort to correlate the physiology of the tissues and organs with their histological structure.

The organization of the text has not been altered by the revision. The chapter on the cell now includes, insofar as possible, much of the recent knowledge gained by research utilizing electron microscopy and histochemistry. Other revisions of interest appear in the chapters on connective tissue, liver, lung, the vascular system and the endocrine system. The illustrative material has been considerably increased by the addition of 73 plates, of which 10 are electron photomicrographs.

The length of the book would make a very generous weekly assignment necessary to cover the material in the usual 11 or 12 week course in medical histology. As a consequence, the lengthy introduction to the study of histology, the study of cells, intercellular substances and fluids of necessity will be areas that may be compressed or eliminated.

Arthur J. Gatz, *Stritch*

Modern Concepts of Communicable Diseases

Morris Greenberg, M.D., M.S.P.H., assistant professor of epidemiology, Columbia University; **Anna V. Mats, R.N., M.A.**, public health nursing consultant in communicable diseases, New York City Department of Health. F. P. Putnam's Sons, New York, 1953. 553 pp. with index. \$6.20.

In Part I of this volume the authors discuss the basic principles of communicable disease. Following an introductory chapter which gives an account of the changing concepts of communicable diseases through the ages, Part I deals with principles of epidemiology, immunology, control of communicable disease and management of the patient. A chapter on medical asepsis is well illustrated.

The 55 chapters of Part II devoted to specific communicable diseases are presented from the epidemiological viewpoint with special consideration given to the causative agent, the host and the environment. This treatment of the subject will be of value to nurses and many persons engaged in the public health field. Medical students and general practitioners will appreciate the presentation of medical care plans which include

treatment, diet and supporting nursing care. The clinical descriptions of the diseases tend to be scanty.

Harold N. Mozar, *Medical Evangelists*

A Modern Practice of Obstetrics

D. M. Stern, M.A., M.B., B.Ch. (Cantab.), F.R.C.S., F.R.C.O.G., lecturer in obstetrics, West London Hospital Medical School; **C. W. F. Burnett, M.D.** (Lond.), F.R.C.S., F.R.C.O.G., assistant lecturer in obstetrics, West London Hospital Medical School. Bailliere, Tindall and Cox, London, 1952. American distributors: The Williams & Wilkins Co., Baltimore. Illustrated. 248 pp. with index. \$7.

The authors base their textbook on some 50,000 consecutive deliveries during the past 16 years at the West Middlesex Hospital in London. The book should find its greatest use in the teaching of midwives and junior medical students.

Starting with a brief discussion of the physiology and anatomy of the mother and fetus, the treatise proceeds in the usual fashion through the features of normal, then abnormal pregnancy and labor, the puerperium, operative obstetrics, the newborn and radiology, and concludes with a chapter on maternal and fetal mortality. The appendix consists of three parts: definition of common obstetrical terms, etymology and sample case record forms.

The text itself is well organized and written in semi-outline form. The drawings are clear. There is no bibliography. Only a modicum of space is devoted to hemorrhage in the last trimester and analgesia in labor, certainly both significant subjects. Fortunately, the authors are not hesitant in expressing their viewpoint in controversial matters. The book may well serve as an introduction to obstetrics for the beginning student.

Warren R. Lang, *Jefferson*

The Autonomic Nervous System, 4th edition

Albert Kuntz, Ph.D., M.D., professor of anatomy, St. Louis University School of Medicine, 94 illustrations. Lea & Febiger, Philadelphia, 1953. Illustrated. 605 pp. with index. \$10.

The new edition of this text has eliminated many of the older direct literature quotations of the preceding editions, thus drastically reducing the literature cited (from 123 pp. to 48 pp.) although the relevant papers published since the third edition are thoroughly covered (30 per cent of the total references appeared since 1944, and of these about 40 per cent were foreign publications.) In addition to the new literature added

throughout the text, extensive rewriting has been done in many areas. Clinical and physiological aspects of the subject have received more attention. For example, histochemistry and the newer literature on sweating are discussed and central nervous system relations of the autonomic system, including cortical regulation, are more extensively considered.

Retention of the same chapter titles and subdivision headings permits reference to the corresponding region of the preceding edition so that the older literature may be consulted, whereas a new arrangement of these headings facilitates use of the book. About 15 new figures have been added and some earlier ones have been omitted. The reproduction of the photographs is much clearer and sharper than heretofore, and the new line drawings less complicated. The complex diagrams used before are still present and, without production of some of the lines in color, remain equally difficult of interpretation.

The index (subjects only) remains brief but for the most part is adequate. In some instances, however, the new material has not been included (e. g., parathyroid innervation on p. 263). However, the rearrangement and addition of new literature and new material have added greatly to this edition. It remains, as it has been in the past, the most complete and comprehensive reference on the anatomy of the autonomic nervous system available in the English language.

Tryphena Humphrey, *Pittsburgh*

Aviation Toxicology

Prepared under the direction of the Committee on Aviation Toxicology, Aero Medical Association. The Blakiston Company, New York, Toronto, 1953. 120 pp. with index. \$4.

This book, prepared under the direction of the Committee on Aviation Toxicology, Aero Medical Association, will serve as an introduction to the field of aviation toxicology, facilitating the collaboration of three professional groups: the aeronautical engineers, the toxicologists and the aeromedical scientists. It also represents an attempt to provide a handbook dealing with toxicity data of special interest to aviation on chemicals, especially toxic gases which are used or may be considered for use in airplanes.

Considerable discussion is given to all

possible toxic substances that may arise in the airplane from such sources as exhaust gases, fire extinguishants, gasoline, oil, deicing fluids, hydraulic fluids, refrigerant fluids, insecticides and from materials which may be carried as passenger baggage or as freight.

Part I deals with the general features of the problems of aviation toxicology. Fairly useful time-concentration curves developed by various investigators for carbon dioxide, carbon monoxide, carbon tetrachloride and methylbromide are presented and discussed.

Part II describes the systems of an airplane involved in aviation toxicology, reviews typical known incidents of exposure to toxic agents and suggests ways in which the toxic hazard can be minimized.

Part III deals with the physical properties and the toxic action of chemicals which are used or are otherwise of interest to aviation toxicology. A wealth of data on the toxic effects associated with particular chemicals has been accumulated.

However, since this book is entitled "Aviation Toxicology," it would appear desirable to include a section devoted to drugs generally used in aviation, particularly compounds proposed for motion sickness which are extensively used by passengers, and central nervous system stimulants sometimes used by aircrews to keep them awake in prolonged flights.

The book contains 75 references to original articles which will guide the specialist to more detailed studies of any particular problem.

The text is presented in a concise and very readable fashion. Students of aviation toxicology will find the text satisfactory since it sums up in a well-organized way present knowledge of the subject, and they will be grateful to the authors for providing them with an authoritative account of a very important branch of science which is in rapid and vigorous development.

James Y. P. Chen, *Marquette*

Fifth Annual Conference of Coordinators of Cancer Teaching

Held in Boston, September 26-27, 1952. Mimeographed. For information write Raymond F. Kaiser, M.D., chief, Cancer Control Branch, National Cancer Institute, Bethesda, Md. 56 pp.

This report deals with the progress of the cancer teaching program in the various medical schools and includes discussions of cancer prevention, environ-

mental aspects of cancer control and prevention and newer methods of presenting the cancer problems to students. Coordinators representing 79 medical schools are surgeons, internists, radiologists, pathologists and teachers with special training.

Started five years ago, the program has among its objectives the development of the awareness of the cancer problem among medical students, aid in comprehensive concept of the disease and the stimulation of cancer research.

Each year tests are given to more than 17,000 medical students. The results of the tests given in the first two years of the program revealed little change, but in 1952 a steady improvement in correctness of answers was noted with special progress being made by members of the senior class. The aim of the coordinators is the steady improvement of the undergraduate teaching program and the expansion of it to include graduate instruction.

Emphasis is placed on the continual study of the patient problem throughout the four-year course, the internship and the graduate years. The art and technique of handling the cancer patient is stressed and the entire medical curriculum is re-evaluated. These studies include development of ward clerkship and the extended use of private patients for teaching purposes. The latter provide a greater spread of clinical material, teach the technique of handling individuals in various walks of life and psychological factors which are essential to the training of the medical student.

Previous to the meeting, studies of various subjects were assigned for panel discussion and the results brought to the whole group. These panel reports covered the cancer teaching program follow-up studies on patients, the cancer curriculum and the relation of interns to cancer study by way of tumor clinics and pathologic conferences. Studies of economic and ethical problems were reported as well as studies of postgraduate and special training.

Willson B. Moody, *Nebraska*

Child Psychology

Lester D. Crow; Alice Crow. College Outline Series. Barnes & Noble, Inc., New York, 1953. 267 pp. with index. \$1.50.

The proper place for utilization of outlines such as this is not easily de-

finer. A beginning student might be helped in gaining an overall view of the subject by some of the generalizing remarks, but at the same time will be misled by many. At the other extreme, he could not digest or see the significance of some of the detailed statistical material given. The more advanced student will not gain much from the general discussions and will be using texts and monographs for more specific data desired. As a basis for topics for review and as a source for bibliography of standard works in the field, this volume may be of help to the student not too advanced in the study of child psychology.

Books and Pamphlets Received

(As space permits, those with the greatest interest to our readers will be reviewed)

A Clinical Approach to Children's Rorschachs

Florence Halpern, Ph.D., assistant professor of clinical psychology, New York University College of Medicine, Grune & Stratton, New York, 1953. 270 pp. with index. \$6.

Essential Urology, 2nd edition

Fletcher H. Colby, M.D., associate clinical professor of genitourinary surgery, Harvard Medical School, Boston, Mass. The Williams & Wilkins Company, Baltimore, 1953. Illustrated. 650 pp. with index. \$5.

Diseases of the Liver, Gallbladder and Bile Ducts, Vol. 1 and 2, 3rd edition

S. S. Lichtman, M.D., F.A.C.P., assistant professor of clinical medicine, Cornell University Medical College, assistant in post-graduate medical instruction, University extension, Columbia University, N. Y. Lea & Febiger, Philadelphia, 1953. 220 illustrations. 1315 pp. plus indexes. \$22.

The Pharm-Assist Manual

Formerly Gray's Pharmaceutical Quiz Compend. Rewritten by A. E. Slesser, B. S. M.S., Ph.D., professor of pharmacy, head of the department of pharmacy and assistant to the dean, University of Kentucky College of Pharmacy, Louisville, Ky. The C. V. Mosby Company, St. Louis, 1953. 167 pp. with index. \$3.50.

Ophthalmologic Diagnosis

F. Herbert Haessler, M.D., professor and director of the division of ophthalmology, Marquette University School of Medicine. The Williams & Wilkins Company, Baltimore, 1953. Illustrated. 387 pp. with index. \$8.

Mechanisms of Urologic Disease

David M. Davis, M.D., professor of urology emeritus, Jefferson Medical College, visiting lecturer in urology, Graduate School of Medicine, University of Pennsylvania.

W. B. Saunders Company, Philadelphia, London, 1953. 156 pp. with index. \$4.50.

Human Neuroanatomy, 3rd edition

Oliver S. Strong, late professor of neurology and neurohistology, College of Physicians and Surgeons, Columbia University; Adolph Elwyn, associate professor of neuroanatomy, College of Physicians and Surgeons, Columbia University. The Williams & Wilkins Company, Baltimore, 1953. Illustrated. 481 pp. with index. \$7.50.

Endocrinology in Clinical Practice

Edited by Gilbert S. Gordan, M.D., Ph.D., assistant professor of medicine, University of California School of Medicine; H. Lissner, M.D., clinical professor of medicine and endocrinology and chief, The Endocrine Clinics, University of California School of Medicine, The Year Book Publishers, Inc., Chicago, 1953. Illustrated. 407 pp. with index. \$10.50.

Cornell Conferences on Therapy, Vol VI

Harry Gold, M.D., managing editor. The Macmillan Company, New York, 1953. 287 pp. \$4.

Commentary on the Effect of Electricity on Muscular Motion

A translation from Luigi Galvani by Robert Montraville Green, M.D., emeritus professor of anatomy, Harvard Medical School. Elizabeth Licht, publisher, Cambridge, Mass., 1953. 97 pp. \$4.

Modern Concepts in Medicine

Julius Jensen, Ph.D. in medicine, University of Minnesota, M.R.C.S. (England), L.R.C.P. (London). The C. V. Mosby Company, St. Louis, 1953. 636 pp. with index. \$11.50.

Textbook of Medical Treatment, 6th edition

Edited by D. M. Dunlop, professor of therapeutics and clinical medicine, University of Edinburgh; L. S. P. Davidson, professor of medicine and clinical medicine, University of Edinburgh; Sir John McNee, regius professor of practice of medicine, University of Glasgow. E. & S. Livingstone Ltd., Edinburgh and London, 1953. American distributors: The Williams & Wilkins Co., Baltimore. 1023 pp. with index. \$9.50.

The Social Insects. O. W. Richards, M.A., D.Sc. Macdonald: London, 1953. Philo-sophical Library, New York, 1953. 219 pp. with index. \$4.75.

The Organization of Public Relations in American Colleges and Universities. American College Public Relations Association, 726 Jackson Place, N. W., Washington, D. C. \$1.

Pediatric Clinics of North America. Vol. 1, No. 1A. A symposium of poliomyelitis. W. B. Saunders Company, 1953. 62 pp. with index.

Statistical Summary of Education, Chap. 1. U. S. Department of Health, Education and Welfare. 53 pp.

Bridging the Gap Between School and College. A progress report on four related projects supported by the Fund for the Advancement of Education. June 1953.

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1. Moyer, J. H., et al.: *Am. J. M. Sc.* 225:379 (April) 1953.
2. Mills, L. C., and Moyer, J. H.: *A.M.A. Arch. Int. Med.* 90:587 (Nov.) 1952.
3. Frankel, E.: *Lancet* 1:408 (Feb. 17) 1951.
4. Johnson, L., et al.: *Texas State J. M.* 48:331 (June) 1952.
5. Council on Pharmacy and Chemistry: *J.A.M.A.* 151:385 (Jan. 31) 1953.
6. Grimson, K. S., et al.: *J.A.M.A.* 149:215 (May 17) 1952.
7. Turner, R.: *Lancet* 1:1217 (June 2) 1951.

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Abstracts and Excerpts

Schafer, Paul W. (A) **Television at the University of Kansas Medical Center**, "Journal of the American Medical Association," Vol. 152, No. 1:75-82, May 2, 1953. (B) **The Kansas Television Experiment**, "Journal of the American Medical Association," Vol. 152, No. 6:554-557, June 6, 1953.

(A) Appropriation for establishment of a television program at the University of Kansas School of Medicine was made by the 1949 legislature. The administration of the school selected the department of surgery to implement the program. In September 1949 a single camera chain of Remington Rand, Inc. vericon television was installed in one of the operating rooms.

The need of color was felt almost immediately. The first permanent installation of a Remington Rand-CBS vericolor camera chain was made in November 1951 and has been in regular use since.

In order to assure that equipment will be usable as technological advances occur in the electronics field, all of the equipment used has been designed to produce a standard Radio Manufacturers Association (RMA) monochrome television signal.

Adequate planning for a competent engineering and technical staff should precede the purchase of equipment. Good programming with a single camera chain requires the technical services of at least four persons: one electronics engineer, two electronics technicians and one program director.

The fact that a television camera for use in surgery can be mounted in a room with sufficient ceiling height to accommodate any major operating room light and the high quality view provided by television suggests that hospitals of the future will find it unnecessary to build costly operating amphitheaters.

Budget of the program has been considered in detail under three headings: permanent equipment, personnel and supplies.

It is recommended that planning by other schools should include the initial installation of a two camera chain, or one camera of the studio type rather than that restricted for use in an operating room.

(B) Original programming consisted of daily televised operations from 8 A.M.

to noon. Student attendance was required for the first period, which included simple procedures essential to medical training. Attendance was good at first for the following three hours, partially because of the novelty of the medium. Eventually it was decided that television was most effective when used in short sequences, to present important aspects of topographic anatomy, regional anatomy, normal and abnormal physiological processes, gross pathological conditions in situ and certain operative details.

Presently, 55 carefully selected basic curriculum subjects are presented to surgical externs each quarter. The classroom teacher is in charge of planning and enlists the aid of other faculty members in many departments. With the program director, the teacher plans the correlation of television scenes in the teaching situation.

Observations of the television program indicate that it offers advantages which include: quality of picture and viewing area; economy in building new hospital buildings because of the lack of need for surgical amphitheaters; the excitement of immediacy; intimacy furnished by the open two-way program audio system; personalization; flexibility; the assurance of adequate preparation on the part of the instructor; time-saving potential, chiefly for the student; integration with other departments; possibility of making and using motion pictures.

Elements which could lead to failure in some situations include inadequate and uninteresting programs and lack of desire on the part of certain teachers to change their teaching methods. At Kansas, success of the program is certain, and plans are underway to enlarge the television staff and to study the continued use of television.

Ruja, Harry. **A Student-Centered Instructor-Rating Scale**, "Educational Administration and Supervision," Vol. 39, No. 4:209-217, April 1953.

Student feeling toward instructors can be determined with the aid of a 90 question test with tested .969 reliability. The test was developed at San Diego State College, using students in philoso-

phy and psychology classes. Students wrote two essays, titled "The College Instructor I Have Admired the Most," and "The College Instructor I Have Admired the Least." From the 62 essays, 147 statements were abstracted. Students in psychology, education and business administration classes were then asked to rate the instructor they liked least and liked most, using the selected remarks. From these findings the 90 statements were developed.

Shapiro, Theresa R., **What Scientists Look for in Their Jobs**, "The Scientific Monthly," Vol. LXXVI, No. 6:335-340, June 1953.

Because of personnel shortages in the sciences and high turnover rate among scientific personnel, an effort was made to find out what scientists want in a job. The information gathered is based on interviews, while acknowledging that there are inherent limitations in gathering information in this fashion. Scientists with Ph.D.'s were studied. Interviews were conducted between December and June 1951, with 407 men physicists, biologists and chemists.

Of prime importance to scientists is

worthwhile and interesting work, which means usually work involving a challenging problem which will make a contribution to knowledge or to humanity. This aim involves a certain degree of independence on the job and sufficient equipment and assistance. Scientists also look for an atmosphere conducive to scientific research. While four out of five men listed interesting and important work as essential, only some 60 per cent singled out adequate compensation and opportunity for advancement as essential requirements.

Bibliography

- Kehoe, Robert A. **The Need to Teach Industrial Health to Medical Students**, "The Journal of the American Medical Association," Vol. 152, No. 13:1262, July 25, 1953.
- Archdall, Mervyn, **Medical Education in Australia**, "World Medical Association Bulletin," Vol. 5, No. 3:176-177, July 1953.
- Bonnevie, Poul, **Medical Education and Society**, "World Medical Association Bulletin," Vol. 5, No. 3: 177-178, July 1953.
- MacDermot, H. E., **General Aspects of Medical Teaching in Canada**, "World Medical Association Bulletin," Vol. 5, No. 3:178-179, July 1953.

The Personnel Exchange

Faculty Vacancies

• The departments of BIOLOGY, ANATOMY, BIOCHEMISTRY and PHARMACOLOGY have vacancies for four professors at the Royal College of Medicine in Baghdad. The salaries are open. For further information address requests directly to: Glenn S. Usher, M.D., chief, Health and Sanitation Division, TCA/Iraq, c/o American Embassy, Baghdad, Iraq.

• Applications are invited for positions of assistant or associate professor of MICROANATOMY and GROSS ANATOMY, duties to commence September 1, 1953. Further information may be obtained from Dr. R. L. deC. H. Saunders, anatomy department, Dalhousie University, Halifax, N. S., Can.

• Assistant resident in CLINICAL PATHOLOGY. Approved for entire training by College of American Pathologists; 1,000-bed teaching hospital; modern equipment; laboratory performs over 1,200 tests per day; research laboratories and facilities available; department has own teaching and research programs. Complete maintenance, including room, board, laundry and medical care, plus stipend of \$900 per year. Contact director, department of clinical pathology and hospital laboratories, Medical College of Virginia, Richmond 19.

• PSYCHIATRIST: Desired for full-time position as university psychiatrist for student health services and as consultant to outpatient mental hygiene clinic and marriage counseling clinic. Prefer diplomate of American Board of Psychiatry or eligible, with training and experience in dynamic psychotherapy. Some teaching required. Salary open. Address: V-10.

• IMMUNOCHEMIST-IMMUNOLOGIST: Department of bacteriology, southern medical school, invites applications for position of instructor or assistant professor. Teaching 16 weeks; remainder of year for research. Include curriculum vitae and bibliography of publications in reply. Address: V-11.

Personnel Available

• SURGEON: Interested in teaching and research; Certified by the American Board of Surgery; Fellow, American College of Surgeons; two years teaching experience in clinical surgery; married; category 4 service U.S. Navy. Full-time work preferred. Address: A-32.

• SURGEON: 32, interested in career in academic surgery. Anticipates completion of American Board of Surgery certification March 1953; application accepted for fellowship in the American College of Surgeons for 1953. Currently holds staff appointment in department of surgery of a medical school. Wife and two children. Has training in basic research and anxious for opportunities in this direction. Full-time position preferred. Address: A-33.

• ANATOMIST: Ph.D., assistant professor, male, married. Four years teaching experience in medical school gross anatomy. Research and interest in neuroanatomy. Available August 1953. Address: A-34.


• ANATOMIST: Ph.D., man, 40. Desires teaching position in anatomy (gross or microscopic). Teaching experience in histology, embryology and gross anatomy in dental and medical schools. Publications. Excellent references. Now employed but may be available on short notice. Address: A-37.

• BACTERIOLOGIST; PARASITOLOGIST; PUBLIC HEALTH INSTRUCTOR: Ph.D., man. Desires teaching position in bacteriology, parasitology or preventive medicine. Teaching experience in these subjects in liberal arts and professional schools. Now employed but may be available on short notice. Publications. Excellent references. Address: A-38.

• INTERNIST: 35 years. Certified. Would like full-time teaching position, associate professor of medicine or higher in medical school where there is an opportunity for organized research. Interested in metabolism and isotope research. Has been connected with teaching university since getting out of service. Associate in medicine 1951. Numerous publications. Address: A-39.

• OPHTHALMOLOGIST: Age 33, married, priority 4, certified, advanced degree in ophthalmology. Engaged now in medical school teaching, research and private practice. Publications include article, monograph and review. Trained in major American institutions. Desires full-time opportunity to combine teaching, research and clinical work. Address: A-40.

• BIOCHEMIST: Ph.D., age 26, married. Four years' research on the biochemistry of human arterial smooth muscle, contraction and tonus mechanisms in relation to hypertension and arteriosclerosis. Desires opportunity to continue biochemical research on the arterial wall under cardiovascular investigator, with possibility of study toward M.D. degree. Available October 1953 or June 1954. Address: A-41.



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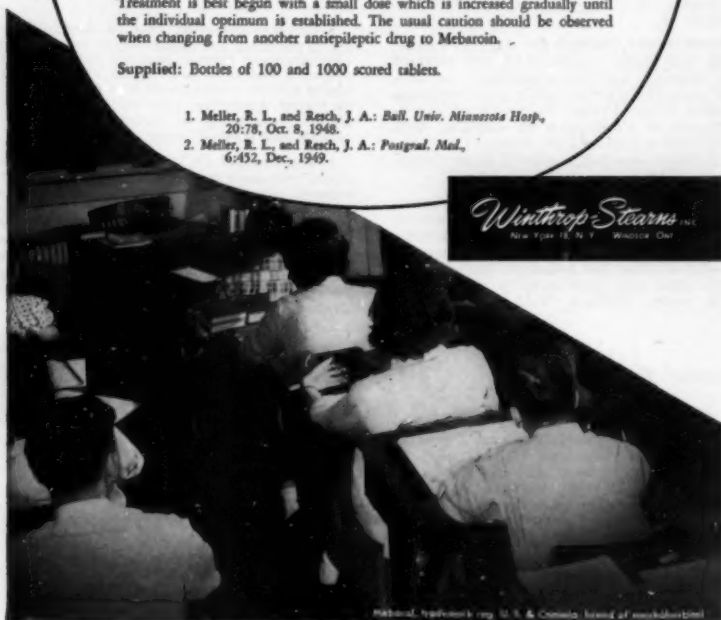
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1. Meller, R. L., and Resch, J. A.: *Bull. Univ. Minnesota Hosp.*, 20:78, Oct. 8, 1948.

2. Meller, R. L., and Resch, J. A.: *Postgrad. Med.*, 6:452, Dec., 1949.

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Information for these columns should reach the Journal office, 185 N. Wabash Ave., Chicago 1, not later than the 10th of the month preceding publication.

• **BIOCHEMIST OR PHYSIOLOGIST:** Ph.D., age 31. Active researcher and teacher at university medical school for five years. Fine scholastic record, public health senior research fellow, many publications. Interested in position allowing work for M.D. degree. Address: A-43.

• **ANATOMIST:** 32, married, children. National Cancer Institute fellow (1 year); experience in all branches of anatomy. Publications on request. Interested in research as well as teaching. Excellent references. Available after July 1, 1953. Address: A-44.

• **BIOCHEMIST-PHYSIOLOGIST:** Man, 30, married, Ph.D. Now assistant professor at medical college. Enthusiastic teacher with several years of research experience. Desires academic position at medical, dental or pharmacy school or liberal arts college where good teaching is considered important. Interested in graduate training program and fundamental research, if available. Administrative duties are very welcome. Publications. Location immaterial. Rank and salary open. Address: A-47.

• **TEACHING FELLOWSHIP — OTOLARYNGOLOGY:** special interest in problems of tumors in region of head and neck, particularly those related to cancer of mouth, larynx and pharynx. Man, single, 37, M.D. (surgeon) University of Cordoba. Head of clinic and assistant chief, department of otolaryngology, Hospital Espanol, Cordoba, 3 years; intern and resident, U.S., 1949-1951. Member scientific societies. Excellent references. Argentine citizen; good command of English. Address: A-49.

• **TEACHING FELLOWSHIP — GYNCOLOGY:** Man, 41, married, M.D., University of Cordoba. Supervision of gynecological patients 1939 to present, 2 years teaching in medical school and hospital. Member scientific societies. Publications. Argentine citizen; good command of English. Address: A-50.

• **YOUNG SURGEON**—Certified general and thoracic boards. University trained. Major interest thoracic and cardiac surgery. Experienced in applied cardio-pulmonary physiology. Some publications. References. Wishes full-time teaching appointment. Address: A-51.

• **PHARMACOLOGIST—ADMINISTRATOR:** Man, 31 married, Ph. D. Desires academic position, preferably with teaching duties. Four years industrial experience, and five years academic experience. Interest in toxicology and neuropharmacology, and graduate student training. Highest references, publications. Address: A-52.

• **RADIOBIOLOGIST - HISTOLOGIST - ZOOLOGIST:** Man, 49, married, Sc.D. Experience mainly in radiobiology and histology. Prefers position in research institution or teaching and

research in histology or zoology department with radiobiological research opportunities, or research appointment in department of roentgenology or radiobiology. Address: A-53.

• **PARASITOLOGIST:** D.Sc., man. Internationally known—widely travelled. Guggenheim fellow. Effective teacher on undergraduate level in zoology, in medical school and post-graduate clinical level. Numerous research papers and monographs in taxonomy of parasites, surveys, chemotherapy and toxicology. Gets on well with colleagues. Desires position in fall. Salary secondary to time for research. Liberal arts college will be considered. Address: A-54.

• **ADMINISTRATOR-EDUCATOR:** Man, 33; B.S., M.A., Ed.D; fellow, national science-medical societies; 17 years experience administrator national public health-medical organizations; university professional school teaching; 5 years intensive experience medical school organization management including affiliation, curriculum, fellowship and research programs, fund raising, physical development, purchasing, student selection; author six books, numerous papers. Seeks top-level administrative post medical school, foundation, east. Address: A-55.

• **Position desired in medical school or university hospital** by woman with M.S. in bacteriology. Three years experience teaching bacteriology, serology, parasitology and clinical microscopy to medical students and medical laboratory technicians. Excellent experience in writing and statistical interpretations in medical fields. Formerly in charge of university hospital bacteriology and serology department. Address: A-56.

• **INTERNEIST:** 35. Certified. Desires full-time academic appointment with research. Currently assistant professor of medicine, director of basic research laboratory (biochemistry and physiology), supported by several grant foundations. Active in clinical teaching. Research and clinical experience at several lead-

Tour to Brazil

A medical graduate is being sought by three men planning a car trip over the Pan-American Highway to Rio de Janeiro in October. The party now includes two Oxford graduates, both English, and an American. Expenses on the road will be shared, but the outfitting of the expedition will be done mostly in England where two cars have been supplied by a manufacturer.

Further information may be obtained by writing to Martin W. Swinbank, 27 Grosvenor Place, London, S.W.1, England.

ing institutions, including fellowship abroad. Priority IV. More than 40 publications. Address: A-57.

• **BIOCHEMIST:** Ph.D., 1953. M.S. Analytical chemistry. Desires academic and/or research position. Strong medical science background. Four years diversified teaching experience. Research experience in enzymes, trace metals and histochemistry. Age 32, family, veteran. Sigma Xi, publications. East preferred. Address: A-59.

• **M.D., Ph.D.—40 years of age, married.** Interested in teaching as associate professor or higher of PREVENTIVE MEDICINE and PUBLIC HEALTH in medical or public health school; prefer associated opportunities for field study in public health. 15 years experience include general public health administration, industrial hygiene, epidemiology, immunology, basic and applied research, and some undergraduate and postgraduate teaching. Publications. Excellent references. Northeastern states preferred. Available on short notice. Address: A-60.

• **A position in PREVENTIVE MEDICINE and PUBLIC HEALTH** with administrative responsibility desired. Age 45, married; two children. 13 years extensive experience in administrative medicine, including the teaching of public health and preventive medicine. Broad background in multiple areas of medical and hospital economics. References. Fellow, American Public Health Association; diplomate, American Board of Preventive Medicine and Public Health. Address: A-61.

• **CHIEF X-RAY TECHNICIAN:** White, male, 45 years, 20 years experience, 12 as chief of busy 20-employee department. Capable of assuming complete supervisory responsibility, teaching and general administration duties. Location desired outside New York area. Address: A-62.

• **PHYSIOLOGIST:** Ph.D. Man, 34. Desires research position. Special training in endocrinology, undergraduate major in veterinary medicine. Experiences in research. Address: A-63.

• **PATHOLOGIST:** M.D. under 40, diplomate. Professor and chairman of department of pathology and chief of diagnostic services; distinguished academic career, varied experience, numerous publications; seeks post as full or associate professor with suitable responsibility and hospital laboratory directorship in progressive medical school. Available June 1954. Own department can be inspected by interested body. Reasons for change: overwork and poor financial return. Address: A-64.

• **BIOCHEMIST:** Ph.D., 1952. Plasma protein fractionation, enzymes, blood coagulation, fibrinogen. Six publications on these topics. Electrophoresis. Five years laboratory teaching experience in medical and dental biochemistry food analysis, blood chemistry. Seeking teaching position with or without facilities for research. Address: A-65.

• **Active researcher:** Member of many scientific organizations. Interest in fields of ENDOCRINE and CARDIOVASCULAR RESEARCH. Ten years research and six years teaching experience. Present position as associate professor in large medical school. Desires change of location. Numerous publications. Excellent recommendations. Minimum salary stipulated. Address: A-66.

• **BACTERIOLOGIST:** Ph.D. Man. Age 27, married. Veteran. Present rank assistant professor. Would like teaching-research position in medical bacteriology, immunology or bacterial physiology. Teaching experience in liberal arts and medical schools. Prefer location in the west or northwest. Publications. References. Available September 1. Address: A-67.

• **BIOCHEMIST:** Ph.D. Age 31. Married. B.S. chemistry, biology. Ph.D. biochemistry; minors: chemistry and microbiology. Publications. Three years graduate teaching assistant, two years post doctoral studies, biochemistry and nutrition. Research interests: vitamin and amino acid biochemistry. Desires teaching position in biochemistry with research opportunity or hospital laboratories with professional, financial advancement. Address: A-68.

• **BIOCHEMIST:** Ph.D. 36. Associate professor with eight years teaching experience in medical biochemistry and three years teaching in immunology. Active research worker with approximately 30 publications in immunology, protein chemistry, enzymology, nutrition, clinical chemistry and analytical chemistry. Experience in teaching postgraduate medical biochemistry. Desires teaching and research position in a medical school or a full-time research appointment at a hospital or other medical research institution. Available at any time in the fall or winter of 1953. Address: A-69.

• **PEDIATRICIAN:** Board eligible; single woman; 42. Protestant. A.B., M.S. and M.D. Extensive graduate training in hematology morphology and 2 years experience as marrow and blood morphologist in pediatric hematology. Teaching experience: university level-gross anatomy, 2 years; college level-health education, 3 years; high school level-biological science, 5 years. Medical practice: large university students' health service, 3 years; private practice, 1 year. 8 publications. Address: A-70.

• **PHYSIOLOGIST:** Male, married. Teaching and research experience. Numerous publications. Ph. D. Background in organic chemistry and biochemistry. Research interests in mammalian and human physiology. Interested in full-time academic position. Address: A-71.

• **PHARMACOLOGIST:** Man, 32. Family, B. S. pharmacy, M.S., Ph.D. pharmacology. Minors: biochemistry and physiology. Two years graduate assistant. One year E. I. Lilly fellow; for the second year National Institutes of Health predoctoral research fellow. Publications and research. Desires position with a medical school department of pharmacology. Time and financial aspects are of secondary importance. Interested particularly in a position that will provide a sound basis for future academic advancement. Available after June 1953. Address: A-72.

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